

SEARCHING CORONAVIRUS: The Quality of Google Search Results around the World

Preliminary Results

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EXECUTIVE SUMMARY

- Participants evaluated **the overall quality of Google's search results about Coronavirus as good, but not great** (average of 7.5 ± 1.5 on a scale of 1 to 10).
- Overall quality varied by country, where **high-quality assessments are positively associated with more links to official information (health and government sources) and fewer links to news media articles.**
- Key issues:
 - **Country-irrelevant results.**
 - **News instead of guidance.**
 - **Low quality and questionable sources.**
 - **Mainstream media echoing misinformation.**
 - **Unclear SOS feature.**
 - **Irrelevant results.**
- Suggested improvements:
 - **Official information more than news.**
 - **Requests for additional information.**
 - **Suggestions for local sources in local language.**
 - **Clarify SOS feature.**

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MOTIVATION AND OBJECTIVES

Internet search is the primary source of information about current affairs, especially at times where a global epidemic is on the rise, and home-isolation and other measures of physical distancing are enacted. High-quality information, at these troubling times, can guide individuals' behavior and have major implications for public health.

Our goal is to map the quality of online COVID-19 search results as seen by a global audience and identify the guiding principles for their improvement. We assess the quality of Google's search results as it is the most widely used search engine around the world, and take a global lens in order to promote an equal information landscape for as many countries and languages as possible.

The results presented in this report are *preliminary*, and thus do not yet cover all languages and countries. However, the key insights cut across many countries and languages, and provide valuable information that Google and other search engines could use to better support informed decision making of users at these troubling times.

METHODS

We launched a survey³ on March 15, 2020 and recruited participants using our social networks, university mailing lists, and professional mailing lists⁴. Participants were asked to choose a language they read and a country that speaks that language (of a list of 392 country-languages pairs); follow instructions to run a Google search query in that language and country, and answer a few questions about the first page of results they received.

Participants used the website <https://valentin.app/> to execute a Google search query in a country, language, and location they choose. They were asked to use a query term, in the language of their choice, that a non-expert in that country would use (without specifying intent) and report on various aspects of the results page. These include the number of links to various sources (governmental, health, news, wikipedia, etc.), the ordering of page elements (news on top, search results, etc.), and whether the results appear in the language chosen for search. In addition, participants were asked to evaluate the overall

³ <http://icc.ise.bgu.ac.il/yalla/corona>

⁴ Including PCST Network - Public Communication of Science and Technology; AIR - Association of Internet Researchers

quality of the results, flag any issues, and suggest ways to improve the results.

Participants provided the URL of the results page they analyzed, therefore it is available for further analysis.

RESULTS

DATA

We report on the preliminary analysis of the first 100 responses that cover 39 different countries and 20 different languages. Responses span about a week, from March 15, 2020 until March 22, 2020. One participant was excluded due to their inability to properly set the search location. The most popular countries and languages in our sample are: Israel (Hebrew-20, English-5, Arabic-1), US-English (8), Brazil - Português (6), Germany - Deutsch (6), Russia - русский (5), France - Français (3), India - English (4), Italy - Italiano (3), France - Français (3), United Kingdom - English (3), the remaining responses contributed one or two reviews to additional 30 countries. Most people used the search term “Corona” or “Coronavirus” in local languages, very few used “covid-19”, and even fewer used specific searches (e.g. one person searched for “corona symptoms”).

RESULTS QUALITY

On a scale of 1 to 10, participants evaluated the overall quality of the first results page as 7.5 ± 1.5 on average and there was no score below 3. The full distribution of scores is shown in Figure 1. Based on these scores and the positive comments participants wrote (in the US, Brazil, Spain, Israel, and New Zealand), **we conclude that the overall results quality is good, but there is a lot of room for improvement.** The rest of the report will focus on the issues and suggestions raised by participants.

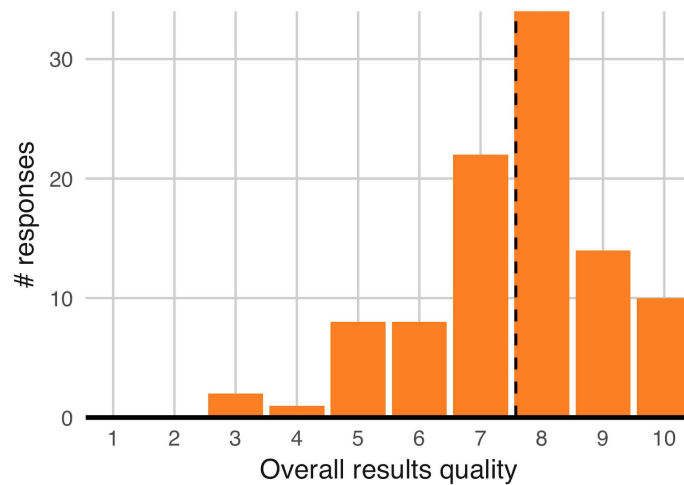


Figure 1. Distribution of overall quality assessments of the first results page. Dashed line designates the average score.

INFORMATION SOURCES AND QUALITY

The average results page contained 5.4 ± 3 links to news and media sources, 4 ± 2.4 links to health or medical sources, 3.8 ± 2.6 links to government sources, and much fewer links to user generated content (0.33 ± 0.74) and educational/academic sources (0.29 ± 1). The average results page contained a low number of links in non-native language (1.3 ± 2.4), but there were 5 cases with more than six links not in the language the user has used for search. **It is important to investigate this language issue because results in non-native language can be inaccessible for large portions of the world's population.**

News was not only the most prevalent source of information on the page, it was also the first module on the page for a majority of people, before "Health and Information" and the regular blue links sections. Top news was at the top of the results page 70% of the time compared to 15% of pages starting with an SOS alert (red or white box), 12% with Health and Information section, and the rest starting with regular blue links or ads.

Wikipedia was not prevalent enough in search results. In 67% of result pages there was no link to an appropriate Wikipedia entry on Coronavirus (in any language). In 30% of result pages there was an appropriate link, and in 3% of cases participants did not respond to this question.

Next, we investigate the relationship between the overall quality of results and the number of links from different sources. Figure 2 shows this association for the number of links from six different type of sources: governmental, medical / health, news, academic, user-generated content, and non-native languages.

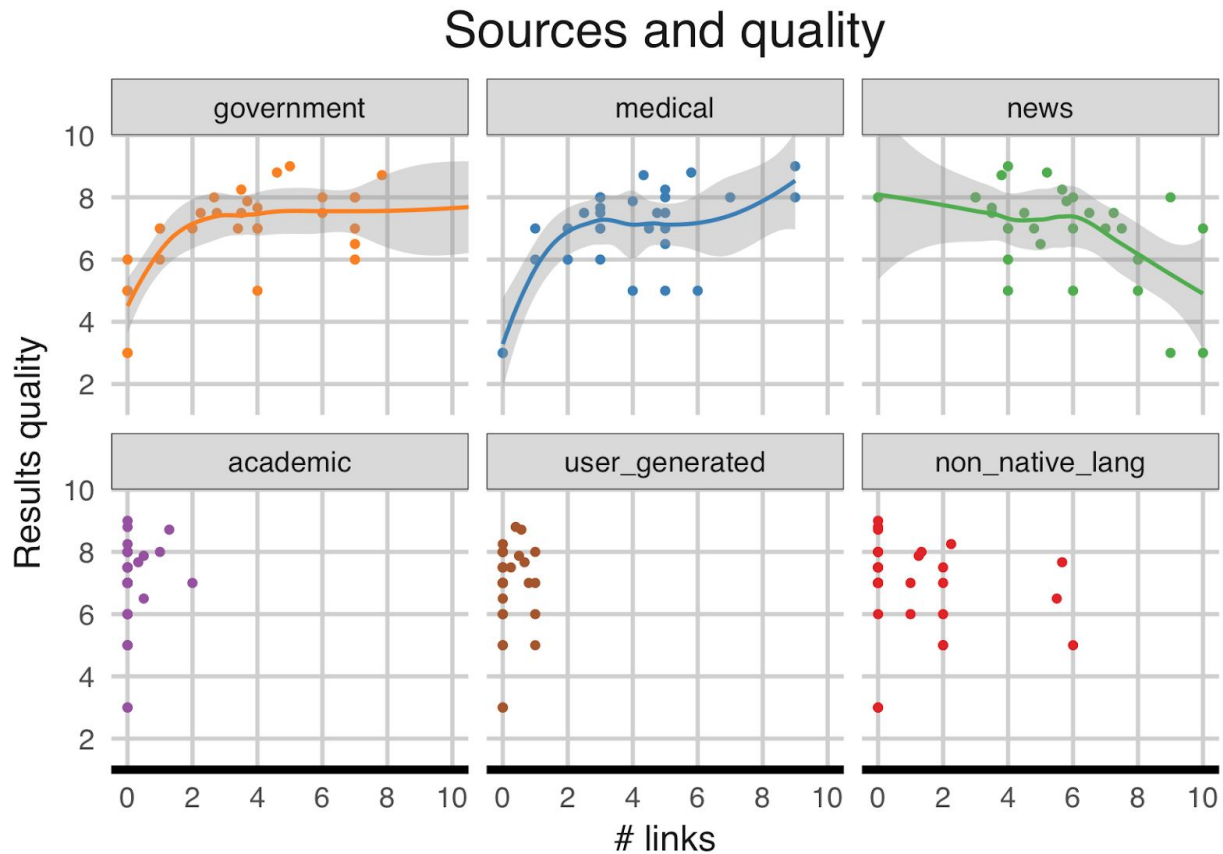


Figure 2. Overall quality of results page (y-axis) as a function of the number of links to different sources (x-axis). Each point represents the average for one country and language combination. Loess smoothing and 95% confidence intervals when the data sufficiently varied along the x-axis (top three panels).

It is clear from Fig. 2 that **high-quality results are positively associated with more government and medical sources on the first results page, and negatively associated with more news media sources**. Figure 3 further demonstrates this point by showing the number of links from each source per country and language. Country and language pairs are ordered by overall quality from top to bottom such that the highest quality search results are on top (e.g. Chile - Espanol has the highest quality score).

Link sources by country and language

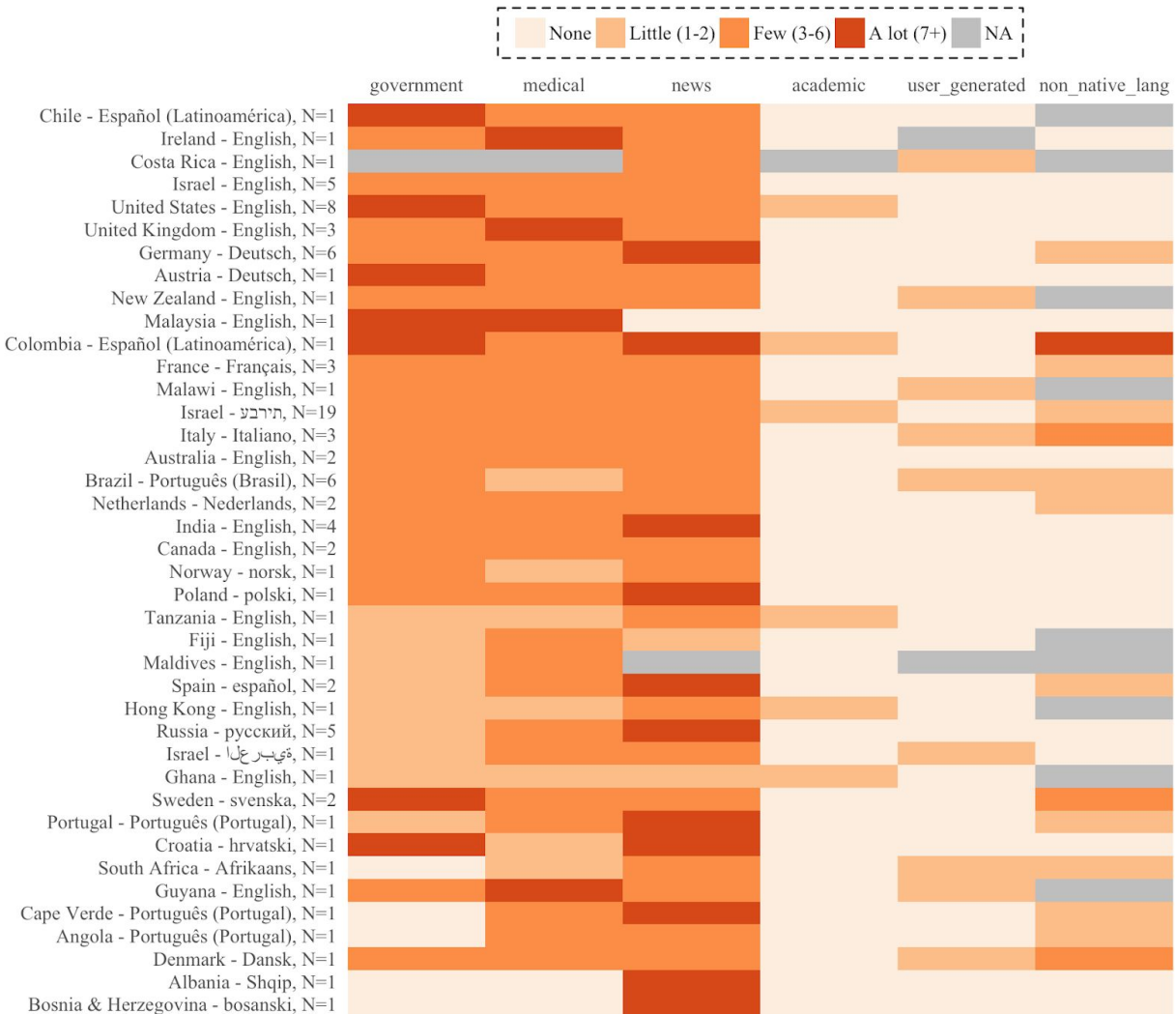


Figure 3. Country and language pairs (y-axis) and the average number of links to different sources (x-axis). The number of responses (N) used for averaging is presented next to each country and language pair. Darker shades mark a higher absolute number of links by that source on the first results page.

PROBLEMATIC RESULTS

Out of 99 responses we analyzed, 25 responses pointed out issues in the results they received from Google's search engine in response to a query about Coronavirus. They provided this written feedback to a question about problematic URLs.

Overall, people appreciate more official government and medical sources over news media, and basic information over updated news. Participants did not value

panic-inducing or dissemination of conspiracy theories on the first results page, even if these were published by credible media sources (e.g. CNN or BBC).

Below, we organize the issues raised by participants into six categories: (1) Country-irrelevant results, (2) News instead of guidance, (3) Low quality and questionable sources, (4) Mainstream media echoing misinformation, (5) Unclear SOS feature, and (6) Irrelevant results.

1. COUNTRY-IRRELEVANT RESULTS

- [Travel advice for Danish citizens](#) while searching from Ghana.
- [Cases in the US page from CDC](#) offered in Denmark.
- [Information from Australian government](#) while searching from Israel in English.
- [UK health services info](#) while searching from Italy.
- [CDC business guidance](#) while searching from Italy.
- [News about US case count](#) while searching from Ireland.
- State [info from Texas, US](#) when searching from the Maldives.
- While searching from Australia, getting results from [NHS](#) (UK), [CDC](#) (US) and the [State of Connecticut](#) (US).

2. NEWS INSTEAD OF GUIDANCE

These are verbatim quotes by participants:

- "Top news stories include fearmongering about the economy, panic-inducing about test shortage, [and] death tolls ... none of these are wrong per se, they are just panic-inducing and not helpful." (Canada - English).
- "[Panic-inducing article](#)" from the BBC (Hungary)
- Showing a lot of scaremongering in the media (Norway - norsk).

3. LOW QUALITY AND QUESTIONABLE SOURCES

- Article about the [tech issues of tracking patients](#) (Israel - Hebrew)
- [German soccer newsite](#) with coronavirus feed as first result
- [Personal website and blog of some medical doctor](#) with little outside links (Israel - Hebrew)
- [News containing inaccurate stats](#): 99% of people will recover (Israel - Hebrew)
- Tabloids in Sweden [[1](#), [2](#)].
- [Sensational news content](#).
- Questionable quality [stats site](#), privately owned (UK)

4. MAINSTREAM MEDIA ECHOING MISINFORMATION

- [Chinese diplomat promotes conspiracy theory](#) (Hong Kong - English)
- Indian ministry criticised over [homeopathic "treatment"](#)

5. UNCLEAR SOS FEATURE

Participants noted that the SOS warning block at the top of the page does not lead anywhere and is not in fact sharable (regardless of the icon).

6. IRRELEVANT RESULTS

- [Liquor consumer news](#) in the US while searching from Ghana.
- [Corona wikipedia entry](#) from astronomy instead of the medical one.
- Swedish wine & liquor company shows a Corona [beer entry](#).
- [Company named Corona Render](#).

SUGGESTED IMPROVEMENTS

Nearly half of responses provided recommendations for improvement. **We organize the suggestions for improvement raised by participants into five categories: (1) Official information more than news, (2) Requests for additional information, (3) Suggestions for local sources in local language, and (4) Clarify SOS feature.** Below are the verbatim quotes and the search country they appeared in.

1. OFFICIAL INFORMATION MORE THAN NEWS

Participants commented, quite consistently, that there should be more official health and government information, and that *it should appear before* the news.

no links come up on page one from universities, medical research community or government.	South Africa
Would be better if the news stories appeared after health/government items	Israel
It might be better for the CDC directives to be above the news	United States
National news site were first which I think should either be latest local related news or official sources instead. Zero scientific sources on first page seems odd	United States
I would expect results from gov sites and health sites to be higher ranked than the news. the news mainly update on new data, but I believe the real instructions and information should be presented first.	Israel

yes, the results are quite great, but the media banner is the first thing people see.	Malawi
The content, especially the first two entries (from two official governmental parties) is already pretty good. Helpful would be less (not non) newspaper and some from public health insurances.	Germany
First, there is a piece of news from the media. Secondly, information from the Ministry of Health. My particular opinion on this search: - Mass journalistic media continue to have a central role as providers of information to the citizen. - Media attention continues focusing on the number of deaths and the number of those affected. This information is necessary and important, but it is time to bring to the public other, more useful and necessary information. - Official sources (ministry, WHO etc.) do not rank first in a regular Google search, but the alarm provided by the search engine (probably the result of an agreement with the WHO or other official entities) ensures that these sources appear on the same screen as the others.	Spain
Not to start with images and top news that are frightening and emotional for no reason, if there is a need for colorful images maybe graphs...	Israel
I expected less media and more protective measures information.	Albania
Put health pages at the top rather than news stories	United Kingdom
It would be reasonable to expect more governmental information	Portugal
Replace top news stories at top of page with safety tips	Ireland
Google highlights news and English language results at the beginning of the page. Instead, I believe it should highlight government and health organization content in the search language.	Germany

2. REQUESTS FOR ADDITIONAL INFORMATION

I would like to see coronavirus cases reported by region/area within the country	Russia
graph trends and statistic summary (open/solved cases, new daily cases) of the specific location can be informative	Israel
Reliable information that clearly defines best practice for social isolation (e.g. don't get your hair cut, don't visit your friend for dinner even if it's just one friend); any information that is optimistic and constructive to help individuals take the right, helpful actions. The results of the whole page are very fear-focused and I think everyone needs a more constructive mindset to really comply with social isolation recommendations.	Canada
More info about the virus and actual news, least politics	Russia
Why not research and more science communication...	Sweden
would expect box on the side like for other conditions with symptoms and what to do	Israel
add a link to wikipedia (probably was supposed to be one, for some reason it wasn't retrieved)	Israel

Assuming the Wikipedia article is good (and it probably is) I would have liked to see it on the first page because it gives a whole lot of history and context and other links that none of the other things did. But mostly I was pleasantly surprised – it was pretty good, low on sensationalism and high on information.	Australia
Information on the home page should include locally relevant information, and include best expert advice; e.g. link to a plain English summary of the latest research such as the paper from Imperial College	Australia

3. SUGGESTIONS FOR LOCAL SOURCES IN LOCAL LANGUAGE

Expected to find Folkhälsomyndigheten (Public Health Agency of Sweden)	Sweden
In non English searches, including global reliable sources in such languages may be important (i.e. WHO for Portuguese)	Brazil
RIVM (Dutch institute for health) should be higher up in the results, results can be from more diverse sources (many sources are NOS (Dutch news site) and WHO (but pages are in English), and from more diverse types of sources.	Netherlands
Main problem to me is that recommendations are not the first thing on top, and a lot of links are from the American CDC or the WHO, all in English. I used an anonymous browser tab to be sure.	Brazil
There are no Guyana-specific resources, as far as I can tell. The government websites linked are US-based (cdc.gov) or Australia-based (health.gov.au) and one of the health websites linked is UK-based (nhs.uk). However, there are lots of links to WHO and one to WHO/PAHO, so there is a good global view of what's happening.	Guyana
There is quite a lot of English url's in my feed, which depict the picture of coronavirus in the UK and US, probably because of my keyword is similar to the English version.	Denmark
I don't know if the current knowledge about the virus has been translated in Hungarian, and if yes, which organization would have this. It would be greatly important to communicate what behaviors are helpful (e.g., social distancing) that citizens can engage in to curb the epidemic, and WHY. I find that even high quality US sources leave out justifications. Simple info-graphic type of information, or short videos would be spectacularly useful for lay audiences. Thanks so much for doing this work!	Hungary
I expected more local sites	Israel
National news site were first which I think should either be latest local related news or official sources instead. Zero scientific sources on first page seems odd	United States
Surprising to find how many US-centric sites were on the first page of the search, when the term 'Wuhan virus' is more used in Hong Kong and Asia.	Hong Kong
i guess google are using what is there. there are more action of the government - to publish reliable data so google can post it as the search results. people who search in their native language cannot all the time understand WHO and Detailed explanation written in english.	Israel
Results show up 3 US governmental websites (cdc.gov, ncdhhs.gov, michigan.gov) which as far as I know are reliable sources but are probably not particularly relevant for someone	United Kingdom

<p>in the UK. However, these are far down the list of links. News links appear above links to UK government and health service sources; this seems like the wrong way round if you are looking for reliable information but I know it is standard Google practice for current events so perhaps altering it would be more confusing.</p>	
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4. CLARIFY SOS FEATURE

<p>the red message (sos-warning) does not link to anywhere, but I can share the search page.</p>	<p>Germany</p>
<p>The purpose of the red box of on top of the page (Warnmeldung) is not really obvious to me. Also the selection of entries for the news-section (Schlagzeilen) is somewhat suprising to me, as I would have expected to find some entries from public service television here.</p>	<p>Austria</p>