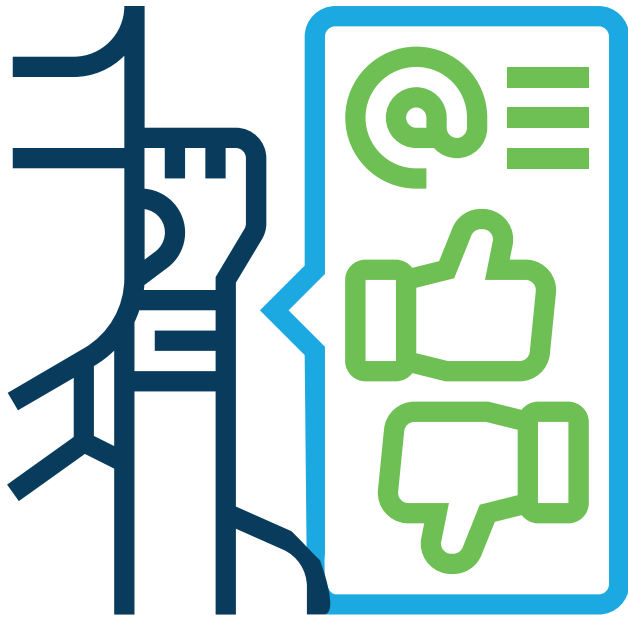


How to Leverage Social Listening to Inform Social and Behavior Change Programs



Introduction

Social media platforms can engage users in multidirectional communication and provide public health programs with a tool to inform and engage diverse audiences on a wide range of public health issues, as well as monitor opinions and behaviors on health topics.^{1,2} Public health campaigns routinely feature social media advertisements, create fan pages, and promote conversations on social media around campaign topics, which makes social listening and social media monitoring useful tools for research and adaptive management of programs.² Social media monitoring refers to quantitatively tracking mentions and comments on social media regarding a specific topic, while social listening allows public health campaigns to better understand the context of online interactions by qualitatively tracking and analyzing conversation content.³ The purpose of this how-to guide is to provide social and behavior change (SBC) program implementers, as well as monitoring, evaluation, and research practitioners with information needed to apply social media monitoring and social listening techniques to inform and evaluate campaigns that make use of social media platforms and other

Developed by Breakthrough RESEARCH, this guide will provide social and behavior change (SBC) program implementers, as well as monitoring, evaluation, and research practitioners with information needed to apply social media monitoring and social listening techniques to inform and evaluate campaigns that make use of social media platforms and other internet-based channels, and highlights where additional or external resources, partnerships, or tools may be needed.

This guide is one of a series of Compass SBC how-to guides that provide step-by-step instructions on how to perform core SBC tasks. From formative research through monitoring and evaluation (M&E), these guides cover each step of the SBC process, offer useful hints, and include important resources and references. This guide will be available on the Compass website in early 2023.

internet-based channels, and highlights where additional or external resources, partnerships, or tools may be needed.

Internet penetration rates vary considerably by country, and social media is often accessed by just a subset of the online population, with urban, socioeconomic and education skews.⁴ However, when SBC campaigns use social media as one of the media chosen for campaign dissemination, potential biases posed by the social listening methodology do not differ to those posed by the online campaign itself. Social listening is well suited to address

monitoring, research, and evaluation needs for any SBC program targeting urban youth or younger adults, and those programs whose target audience has an online presence.

Applying Social Listening to SBC Campaigns

The process of applying social media monitoring and social listening to an SBC campaign involves five steps that are outlined below alongside examples of what this process entails based on Breakthrough RESEARCH's application of these methodologies (see Box 1). We used **Brandwatch**, one of many available subscription-based suites of social listening tools, which includes machine learning^a algorithms for rapid processing of large amounts of data. As social listening is an emerging and growing tool, most program implementing organizations would benefit from collaborating with a resource partner, such as Fluency/MC Saatchi, at least initially, to build capacity to carry out this work.

Box 1 Breakthrough RESEARCH's application of social monitoring and social listening methodologies

The USAID-funded **Breakthrough RESEARCH** project, in partnership with Fluency/M&C Saatchi, applied social listening and social media monitoring as part of monitoring, evaluation, and research activities. This guide includes examples of two exercises:



Social listening and social media monitoring as part of a multi-method adaptive management and impact evaluation strategy of Breakthrough ACTION's *Merçi Mon Héros* (MMH) campaign in Burkina Faso, Niger, Togo, and Côte d'Ivoire.⁵



A five-year time trend analysis of web-based discourse related to gender inequities and health in Nigeria using social listening.⁶

^aMachine learning refers to the use of computer systems that are able to learn and adapt without following explicit instructions, by using algorithms and statistical models to analyze and draw inferences from patterns in data.

STEP 1 Ensure a sufficient volume of topic-specific online conversation in your target countries

To effectively employ social listening, it is necessary to establish whether a sufficient volume of conversation exists to analyze. To assess the volume, run a quick exploratory search of online content using a select group of keywords. This exploratory search can be done manually on Twitter using the keyword search function, or by using a social listening tool such as Brandwatch. This search string can be enhanced at a later point (see **step 3**)—at this point the purpose is simply to ensure that conversation does exist and whether social listening will be a useful approach to adopt. There is no expected benchmark for the volume of posts, as this will vary significantly based on topic and/or review period. Broadening search terms if a limited volume of conversation is found may be useful for exploratory purposes. However, as the search string is honed and rules are defined, the sample of relevant posts will be reduced. If social listening will be used to assess changes in online conversation before and after an intervention, non-existent or limited content can still serve as a baseline measure. **Table 1** (page 3) shows an example of how the MMH social media monitoring team assessed volume of conversation for a menstruation-related search string.

Additionally, assess which social media platforms are most active and relevant in the country of interest, and what privacy limitations are associated with these platforms. For instance, due to privacy concerns and application program interface limitations, Facebook and Instagram now limit the depth of data provided to third-party applications and social listening tools. Only public facing posts and pages are accessible for social media listening extraction on Facebook, while only pre-registered hashtags are trackable on Instagram. Relatedly, if Facebook or Instagram are key platforms for the target audiences, it is crucial that social listening analysts have administrative access to campaign pages (see **step 3** for more details on privacy limitations).

STEP 2 Develop measures to monitor the campaign social media strategy

Identify measures such as conversation volume as key indicators to track topic-specific social media posts and comments as well as social media users' interaction with the SBC campaign over time. **Table 2** (page 3) defines five commonly used indicators to assess SBC campaign progress: conversation volume, reach, engagement, views, and hashtag counts.

TABLE 1 ASSESSING VOLUME OF CONVERSATION AND RELATED SOCIAL MEDIA MONITORING DECISION

Source	Search terms used	Country	Conversation volume Nov 2018–Nov 2019 (posts)	Decision
Social media platforms	Menstruation search string (no noise removed)	Côte d'Ivoire	81,190	Cut down noise by: A) training artificial intelligence to recognize and remove irrelevant comments, and B) tying search terms to pronouns to increase relevancy (see step 3)
Social media platforms	Menstruation search string (with noise removed)	Côte d'Ivoire	12,151	Sufficient for analysis
Social media platforms	Menstruation search string (with noise removed)	Niger	1,520	Low sample—consider expanding beyond just social media to capture anonymized search data to identify behavior patterns

*See appendix for full search strings

TABLE 2 COMMONLY USED INDICATORS TO ASSESS COMMUNICATION CAMPAIGN PROGRESS

Indicator	Definition
Conversation volume	Number of social media posts pertaining to a specific topic.
Reach	Number of screens the campaign content entered.
Engagement	Number of times people engaged with campaign posts through reactions, comments, shares, retweets, mentions, and likes. Engagement can occur through paid promotion or when social media users organically find campaign content.
Views	Number of campaign video views (at least 3 seconds, at least 30 seconds, to completion).
Hashtag counts	Number of specific hashtag uses pertaining to campaign content.

To track conversations directly linked to the campaign of interest, pair designated hashtags representing the goals of the campaign with the campaign content to facilitate monitoring of campaign topics or specific content. Implementation of these hashtags should be consistent across social media channels to maximize their uptake. However, not everybody will necessarily use the hashtags when commenting, so it is not an exhaustive way of monitoring impact. [Box 2](#) (page 4) provides an example tracking campaign engagement.

STEP 3 Identify search terms to assess campaign and related conversations

Once you know how you will be assessing campaign-relevant content and measuring campaign progress, you need to identify social media content that will be included in your measurement of conversation volume. You must define search terms to identify social media conversations

related to the SBC campaign's topics of interest. These keywords should be shared with local stakeholders to ensure you captured not only the correct meaning in local language, but also any known slang terminology. These translated and context specific search terms are entered into a Boolean search string in a text analysis software—a type of search that allows users to combine or exclude keywords—designed to identify conversations across social media that are most relevant to the selected search terms. Use advanced, academically proven, psycholinguistic artificial intelligence to analyze social media data and scrape all public facing social media for relevant conversations, including mentions from any Facebook campaign pages, Twitter, social newsfeeds, blogs, forums, Reddit, Tumblr, and YouTube using social media analytics tools such as those offered by machine learning software. Privacy limitations relating to Facebook and Instagram only allow posts from pages where you have administrative access to be included.



Box 2 Quantifying engagement with a campaign

Tracking campaign engagement with the MMH content allowed us to see which types of content received most attention. We did this by overlaying the conversation volume data that resulted from Steps 1–3 with program data on which pieces of campaign content were released when and on which platforms. Audiences engaged with Facebook Live videos more than with individual campaign videos. However, an MMH live streamed concert received by far the most engagement, measured by the number of likes, comments, and retweets/shares, within the study period.



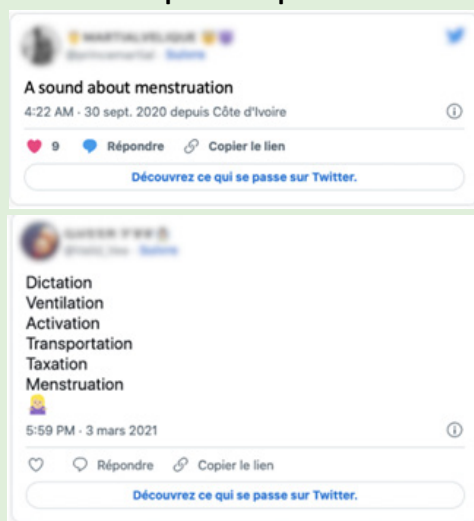
Given that certain keywords generate a sizeable volume of irrelevant conversation, you can use two techniques to minimize it. First, by filtering the search and tying keywords of interest to pronouns such as, “I”, “my”, “his”, “her”, a significant volume of irrelevant noise are cleaned from the results, ensuring the sample contains posts related to personal beliefs, experiences, or conversations that are more suitable for qualitative analysis (see example

in Box 3 where examples without pronouns as part of the search strategy led to irrelevant posts). In addition, use machine learning technology, to train the software to reduce irrelevant content. To do this, a human analyst must train the algorithm to classify a selection of social posts into key topic areas. This involves manually selecting approximately 15–20 training posts that accurately reflect each key topic area. The machine learning algorithm then



Box 3 Examples of search results with and without use of pronouns as part of the search strategy

Examples with pronouns



Examples without pronouns



identifies, at-scale, other posts which match the criteria of the training posts based on the language and content detected. The human analyst should then continue to sense check and retrain the algorithm as necessary, informing the algorithm if it has inaccurately assigned a post to the wrong topic area. Although machine learning algorithms are not perfect at detecting nuance in language, such as sarcasm, they are constantly improving.

STEP 4 Qualitatively assess audience attitudes, opinions, and behaviors and understand conversation context through social media listening

Use a social listening tool alongside proprietary artificial intelligence and advanced data science techniques (such as proximity mapping, topic clustering, discourse analysis, and psycholinguistic analysis, to name a few), that enables analysts to qualitatively investigate the data in various ways and at a granular level. Data visualization options within the social media analytic tool allow users to identify emerging themes.

You cannot pre-emptively filter searches by age or sex, but once a search is conducted, you are able to filter your dataset to analyze different demographic groups separately. Techniques for identifying sex, age, and socio-economic status are evolving, mostly based on analyzing the keywords and account activity associated with individual profiles. As artificial intelligence becomes more

sophisticated, social listening platforms will improve at detecting sociodemographic details of users, and thus this technology's use in research will continue to require careful ethical consideration. For example, artificial intelligence can accurately detect sexual orientation, which may place users in danger if they live in legally and socially restrictive settings.

The algorithms employed for analyses using machine learning are constantly evolving. As such, the machine becomes more accurate over time as it continues to understand the nuance within topic material.

STEP 5 Assess campaign impact

Social listening and social media monitoring techniques have been most widely used to inform SBC campaigns and track their performance on social media (steps 1–4), rather than to assess their impact on conversations or reported behavior. There are two techniques you can use to establish plausible associations between the campaign and specific metrics you may have identified in [step 2](#).

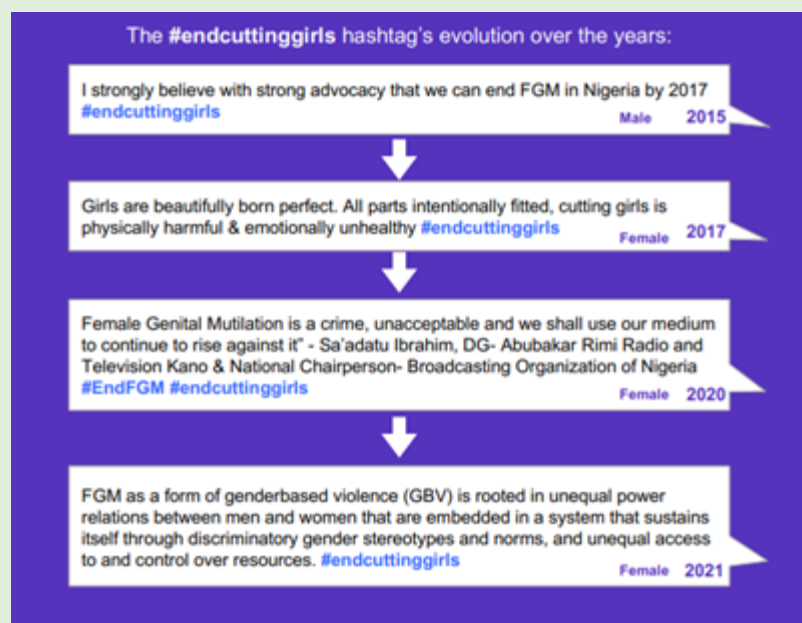
1. Plot time trends for topic specific relevant conversation volume and MMH online content distribution.

Following [step 3](#) where you identified search terms to assess the campaign and related conversations, create campaign topic-specific search terms (one per topic if the campaign covers several topics, such as menstruation, contraception, sexual initiation) and conduct



Box 4 Example of step 4— Qualitative analysis

Qualitative analysis of gender inequities and health in Nigeria shows that discourse online related to female genital mutilation (FGM) in Nigeria has evolved. Before 2019, users were more willing to discuss overt transgressions on women's bodies and bodily autonomy (again, like FGM). More recently, they are digging deeper, identifying, and deconstructing the systems that allow for FGM to take place. The conversations are reflecting that there are greater efforts to hold people or structures accountable.





Box 5 Quantifying and qualifying emotion and sentiment

Emotion is defined as a mental state derived from both internal and external factors, while sentiment is defined as a view, attitude, or opinion. In Nigeria, we quantified emotion and sentiment for online conversations related to women's health awareness. An artificial intelligence algorithm classified these posts automatically, based on a bank of hundreds of thousands of posts by which it was trained. In this process, these classifications are uniformly applied, but can be re-classified by human intervention if posts are deemed to have been classified incorrectly. Over half of detected emotions were labeled as sad through the machine learning enabled classification process (52%), while only 30% were optimistic. Sentiment analysis indicates that this topic mostly occurs with neutral sentiment. These results allowed us to delve deeper into the data to understand why the majority of posts related to women's health awareness carry a sad emotion.

Beyond the quantification of emotion, we are able to review the data behind the quantification, to qualitatively assess what an angry, joyous, optimistic, or sad post is like.



searches to extract topic-specific conversation volume metrics across time. Plot the conversation volume metrics and superimpose the campaign events that disseminated information on the specific topic used to construct the search terms. Conduct a chi-square statistical test of conversation volume, comparing the total conversation volume from the week prior to the campaign event and the week following the campaign event. A significant increase in conversation volume indicates a correlation between campaign content and a change in conversation. This test will not allow you to ascertain if the increase in conversation volume was a direct effect of the campaign but provides an indication that the campaign may have contributed to the change observed.

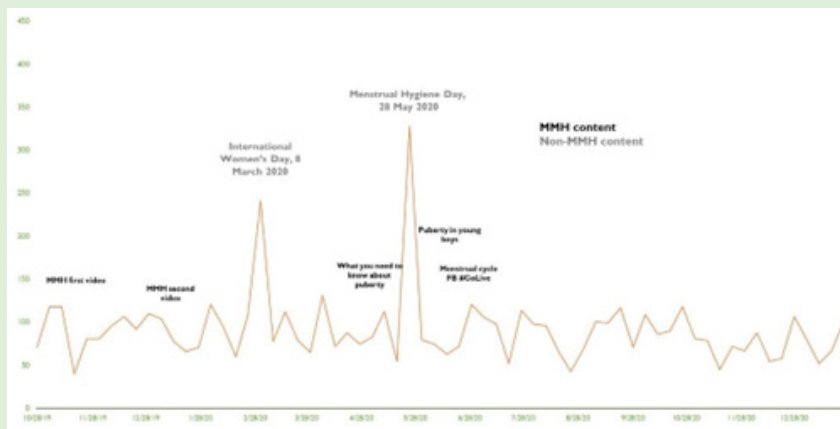
2. **Plot local Google Trends search terms against campaign content distribution.** Google Trends search data shows how frequently a given term is searched for, relative to total search volume for a country, over a

period of time. A value of 100 is the peak popularity of the term, while a value of 0 means that the term did not register at all during that week, relative to other online searches in the country. To assess if the campaign might be influencing Google searches in your target location, go to Google Trends, specify your search terms, and customize your search by choosing to plot “interest over time”. Drop down menus allow you to refine region, time period, category, and types of searches. Superimpose the campaign events that disseminated information on the specific topic used in the Google Trend search. Conduct a chi-square statistical test of search volume, comparing the total search volume from the week prior to the campaign event and the week following the campaign event. As above, a significant increase in Google searches of the selected topic indicates a correlation between campaign content and information seeking via Google searches, not causation.



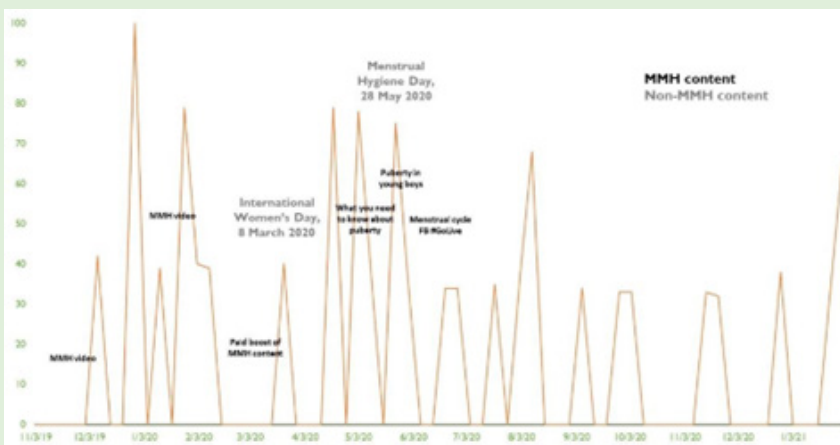
Box 6 Example of a time trend analysis of volume of topic-specific conversation

In Côte d’Ivoire, overall, there is a discernable and statistically significant uptick ($p=0.039$) in conversation volume during the weeks following publication of MMH menstruation/puberty content. The graph on the right shows menstruation/puberty mentions in web-based conversation during the implementation period.



Box 7 Example of a Google Trends search terms search against campaign content distribution

The graph to the right shows menstruation search data during the MMH campaign implementation period. There is no discernable effect of MMH campaign content release and Google searches in Côte d’Ivoire.



Box 8

How can you identify and analyze disinformation efforts when analyzing sentiment and other social listening metrics?

As the spread of mis/disinformation increases and poses a threat to public health, this can be, in part, combatted through content analytics. Machine training algorithms can be used to identify and classify web-based content as correct information or mis/disinformation. Artificial intelligence-based tools can perform linguistic analysis of textual content and detect cues including word patterns, syntax construction and readability, to differentiate computer-generated content from human-produced text. Such algorithms can take any piece of text and check for word vectors, word positioning, and connotation to identify traces of hate speech. Moreover, artificial intelligence algorithms can reverse engineer manipulated images and videos to detect deep fakes and highlight content that needs to be flagged as potential misinformation. This use requires a training process to enable the machine learning algorithm to recognize what is real information and what is not. You can then subdivide your analysis by looking at posts reflecting correct and incorrect information.

Artificial intelligence techniques alone are unlikely to be sufficient in combatting mis/disinformation but combining artificial intelligence results with independent human analysis can be a powerful antidote. With so much content generated daily, in multiple languages, artificial intelligence can help with the filtering process, accelerating human capacity and bandwidth.

Ultimately, the application of artificial intelligence technology to combat mis/disinformation is only a reactionary step rather than a proactive approach. Large-scale education is needed to ensure vigilance around disinformation, but artificial intelligence can help to identify, flag, and mitigate the impact of disinformation, at-scale.

Looking forward

Social listening and social media monitoring are effective monitoring and evaluation support tools that can be used to aid in adaptive management of SBC campaigns. With the rise in internet and social media penetration as well as the accelerated development of artificial intelligence to enhance rapid data extraction and analysis tools, these methodologies will become increasingly relevant for public health research and evaluation. For health communication campaigns that already engage populations who have

online presence, social listening and social media monitoring can be powerful monitoring and evaluation tools. These five steps summarize the process for engaging social listening and social media monitoring as evaluation and monitoring tools, allowing even novice users to begin to use them.

For more information and detail, see [Breakthrough RESEARCH's resources](#) on using social media listening, and [Fluency/MC Saatchi](#).

References

1. Capurro, D. et al. 2014. "The use of social networking sites for public health practice and research: A systematic review," *J Med Internet Res* 16(3): e79. doi: 10.2196/jmir.2679
2. Kass-Hout, T. A. and H. Alhinnawi. 2013. "Social media in public health," *Br Med Bull* 108(1): 5–24. doi: 10.1093/bmb/ldt028
3. Pomputius, A. 2019. "Can you hear me now? Social listening as a strategy for understanding user needs," *Med Ref Serv Q* 38(2): 181–186. doi: 10.1080/02763869.2019.1588042
4. Pew Research Center. 2018. "Social media use continues to rise in developing countries but plateaus across developed ones." Washington, D.C.: Pew Research Center. <https://www.pewresearch.org/global/wp-content/uploads/sites/2/2018/06/Pew-Research-Center-Global-Tech-Social-Media-Use-2018.06.19.pdf> [accessed September 15, 2021]
5. Silva, M., J. Walker, E. Portillo, and L. Dougherty. 2022. "Strengthening the Merci Mon Héros campaign through adaptive management: application of social listening methodology," *JMIR Public Health and Surveillance* 8(6): e35663. doi: 10.2196/35663
6. Silva, M. et al. "Social listening analysis of online gender-based violence discourse in Nigeria." Submitted *JMIR Public Health and Surveillance*.

Acknowledgments

The authors would like to thank Leanne Dougherty, Amanda Kalamar, and Laura Reichenbach at Population Council and Lindsay Swisher and Joan Schubert at the United States Agency for International Development for their technical reviews.

Suggested citation:

Silva, Martha and Jonathan Walker. 2022. "How to leverage social listening to inform social and behavior change programs," *Breakthrough RESEARCH How-to Guide*. Washington, DC: Population Council.

©2022 The Population Council. All rights reserved.

Email

BreakthroughResearch@popcouncil.org

Breakthrough RESEARCH | Population Council

4301 Connecticut Ave., NW, Suite 280 | Washington, DC 20008
+1 202 237 9400 | breakthroughactionandresearch.org



Breakthrough RESEARCH is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of cooperative agreement no. AID-OAA-A-17-00018. The contents of this document are the sole responsibility of Breakthrough RESEARCH and Population Council and do not necessarily reflect the views of USAID or the United States Government.



Breakthrough RESEARCH catalyzes social and behavior change (SBC) by conducting state-of-the-art research and evaluation and promoting evidence-based solutions to improve health and development programs around the world. Breakthrough RESEARCH is a consortium led by the Population Council in partnership with Avenir Health, ideas42, Institute for Reproductive Health at Georgetown University, Population Reference Bureau, and Tulane University.