

### **A guideline on how to recruit respondents for online surveys using Facebook and Instagram: Using hard-to-reach health workers as an example (Version 1.0)**

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**A guideline on how to recruit respondents for  
online surveys using Facebook and Instagram:  
Using hard-to-reach health workers as an ex-  
ample**

Steffen Pöttschke, Bernd Weiß, Jessica Daikeler, Henning Silber &  
Christoph Beuthner

## **Abstract**

Social Networking Sites (SNS) offer survey scientists a relatively new tool to recruit participants, especially among otherwise hard-to-reach populations. Facebook and Instagram, in particular, allow the distribution of advertisements to specific subsets of their users at low cost. Researchers can use such targeted advertisements to guide participants to their online questionnaires. In recent years, an increasing number of studies have shown that this approach can be successfully applied to a range of different target groups. However, a certain familiarity with the tools and mechanisms provided by Meta is necessary to employ this sampling method. Therefore, in this guideline, we will first give a general introduction to sampling via advertisements on Facebook and Instagram before providing detailed instructions on the implementation of such a recruitment campaign. This will be followed by a brief summary of a recent study conducted by GESIS using Meta's platforms to recruit professionals in the German health care sector. Finally, we provide recommendations with respect to the reporting of methodological parameters when using this approach, propose a flowchart to visualize sample sizes at different points during the recruitment process and offer a glossary containing definitions of essential terms researchers are confronted with when using Meta's advertisement interface.

## **Citation**

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# 1 Why use Facebook and Instagram to recruit survey respondents?

Survey sampling is a challenging task. Its success does, for example, not only depend on the existence of suitable sampling frames but also on the availability of sufficient resources in terms of time, money, and personnel to use them. Furthermore, while there are, in many countries, established methods to draw probability-based samples of the general population, the situation is often different regarding specific sub-populations. Many such groups can be hard-to-survey with conventional methods for various reasons. Tourangeau (2014) differentiates five, at times overlapping, categories in this regard: Individuals might be (1) hard-to-persuade to participate in surveys or generally (2) hard-to-interview, for example, due to a lack of specific language skills. While these two aspects are beyond the scope of this guideline, the remaining three are closely associated with our topic. Namely, populations might also be (3) hard-to-sample, due to the lack of a sampling frame, (4) hard-to-identify, for example, if individuals are reluctant to report specific selection criteria due to their perceived association with stigmata, or (5) hard-to-locate and contact, for instance, due to their mobility behavior or the existence of gatekeepers. In the following, we will refer to such populations collectively as hard-to-reach. Scholars interested in such hard-to-reach groups often either *need* to consider non-probability methods or consciously *opt for* them. The first might be the case if no probability-based sampling method is applicable, and the second if specific research designs do not require their use (e.g., in time-sensitive explorative or in some experimental research). In this guideline, we will give an introduction to the recruitment of respondents via Social Networking Sites (SNS), more particularly, Facebook and Instagram, which we believe constitutes one of the most promising approaches regarding the sampling of hard-to-reach populations.

According to some reports, the most successful social networking platforms combined had 4.76 billion users worldwide in January 2023 (DataReportal, 2023). In its annual report, Meta Platforms Inc. (formerly known as Facebook Inc.) states that Facebook alone had 2.96 billion monthly active users worldwide in December 2022. For all its products (incl. Instagram and WhatsApp), the company put the number of users at 3.74 billion (Meta, 2023b). Yet, these figures should not directly be equated with individual human beings. Because they also include legal entities, bots and are likely to be inflated due to users having multiple accounts on the same or different services. However, even taken with this grain of salt, it stands to reason that a considerable part of the world population uses SNS, such as Facebook and Instagram. Consequently, these SNS are worth to be considered as sampling frames for survey research.

While it is also possible to recruit survey participants through SNS by using other approaches (e.g., by setting up specific Facebook groups or joining existing ones (Brickman Bhutta, 2012; Espinoza-Castro, Vásquez Rueda, Mendoza Lopez, & Radon, 2018; Valdez et al., 2014)) the most effective, convenient, and systematic way to do so consists of using the respective advertisement features. Advertisements on Facebook and Instagram allow the targeting of specific subgroups among their users, e.g., defined by demographic characteristics, interests, or behavior. Targeted advertising provides survey researchers with a possibility to recruit members of specific groups as respondents for their projects. Meta provides an easy web interface, the Facebook Advertisements Manager (FAM, in the following)<sup>1</sup>, to place advertisements on both mentioned SNS. This is (rather) comfortable and does not presuppose advertisers having a deeper understanding of technical and conceptual details underlying the computational part of the targeting. FAM allows customers to display targeted advertisements to specific user groups on Facebook and Instagram in a way that is both automated but highly adjustable. Furthermore, compared to more traditional sampling approaches, costs per complete questionnaire are lower and surveys can be conducted in a relatively short amount of time.

This being said, direct comparison of costs, beyond anecdotal evidence based on individual experience

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<sup>1</sup><https://www.facebook.com/business/tools/ads-manager> (accessed on February 24, 2023)

with previous research projects, is difficult because the total amount of these costs depends on many factors such as target population, topic of the survey, survey mode, cost of the sampling frame and length of the questionnaire, just to name a few. Such comparisons are furthermore hampered by the fact that few studies report the costs for sampling and data collection in detail.

The paper by Hardigan, Popovici, & Carvajal (2016) constitutes an exception in this regard and shall, therefore, be used to put the costs of the presented method in context on an admittedly superficial level. In their article, the authors discuss the results of a project surveying pharmacists in the United States using three different survey modes (mail, e-mail, mixed mode) and two sampling frames. The latter consisted of a register including the postal addresses of 7,200 pharmacists (used for the mail and mixed mode) and a database of relevant e-mail addresses (used for an online survey), respectively. We will compare this study with a recent SNS-recruited online survey on health care professionals in Germany that used Facebook and Instagram to invite respondents (for a more detailed description, see Section 4 and Priebe et al. (2021). Considering only the direct costs of the sampling frame, recruitment, and data collection, Hardigan et al. paid \$8.11 per completed questionnaire in the mail survey, \$26.58 in the online survey, and \$40.25 in the mixed mode (Hardigan et al., 2016, pp. 144–145, own calculation). In contrast, the costs per completed questionnaire in our survey of health care workers amounted to €0.88 per completed survey. This corresponds to roughly \$0.97 at the time of this guideline's publication. Unfortunately, Hardigan et al. only mention that their data (total n = 710) was collected from March to April 2012 without specifying the exact duration of the field period. However, the authors state that, on average, 23.6 days passed between invitation and collection of the response in the mail mode, with the other two modes being considerably quicker (Hardigan et al., 2016, p. 145). Data collection in the survey of health care workers was carried out from April 4 to Mai 5, 2021, and, hence, took 21 days (total n = 3,075). This suggests that recruitment via SNS is, in comparison, indeed rather cost-efficient and quick.

Using advertisements on SNS to sample respondents also has downsides. Users<sup>2</sup> may not click on advertisements and thus may not participate in the survey for various reasons (e.g., non-appealing advertisement text or picture, lack of time or interest). This self-selection mechanism can lead to various biases in the respondent sample, of which researchers should be aware.

Furthermore, some Facebook/Instagram users might intentionally fill their profile with inaccurate information, leading to an incorrect in- or exclusion and, thus, increasing (over-/undercoverage) biases. Additionally, the algorithm which displays the advertisements might not work efficiently for smaller populations, which can negatively affect the recruitment of participants. Moreover, researchers have to work with the tools Meta provides and within the regulations the company sets, which might limit their influence on specific aspects of the advertisement campaign (e.g., selection of media elements, wording of ad texts). Finally, available targeting options might change over time. In the case of Facebook and Instagram, for example, it had been possible in the past to display targeted advertisements to members of the LGBTQ community and, at least in the US, based on users' preferences for specific political parties. However, in part due to the (possible) abuse of such opportunities to display targeted messages, Meta Inc. has disabled these options along with targeting based on ethnic, religious, and health-related characteristics (Isaac & Hsu, 2021; Meta, 2022).

More generally, it must be clearly stated that gaining probability-based samples for the general population or sub-populations via SNS is impossible. The above-stated figures on the size of SNS userbases, as impressive as they are, indicate that by far not all members of the overall population in any given country are included in them. However, a prerequisite for a probabilistic sample is that all population elements have a known and positive probability of being drawn into it. This is not the case with SNS because the

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<sup>2</sup>We speak of Facebook/Instagram 'users' as long as individuals have not entered the survey. Once they agreed to participate, we speak of (survey) 'respondents' or 'participants'.

population from which the potential respondents are drawn is unknown. If we consider the user numbers of social networks from the previous section, it becomes clear that some elements of a given country's overall population are not represented in the sample as they might not use any Meta products (undercoverage). At the same time, it is likely that some elements are included too frequently, for example, people who own more than one account (overcoverage). Furthermore, with regard to the recruitment through targeted advertisements on Meta's SNS it has to be taken into account that the targeting algorithms have the character of black boxes for researchers as the company does not openly share information on their working parameters. Hence, the selection probabilities for individual elements in the population are completely unknown. Finally, the likelihood of exposure to advertisements and whether they are read or only quickly scrolled over depend significantly on individuals' using behavior of social platforms.

It follows from these limitations that research findings based on a sample drawn from SNS *cannot* be generalized to the entire target population.

Notwithstanding these limitations, over the last few years, several studies have shown that using Facebook and Instagram advertisements is a feasible way to sample narrowly defined and otherwise hard-to-reach target populations.

Pöttschke & Braun (2017), for example, used Facebook to sample Polish migrants in Austria, Ireland, Switzerland, and the UK. They successfully recruited 1,103 respondents (96% belonging to the target population) within a field period of four weeks. In another study, Pöttschke & Weiß (2021) utilize Facebook and Instagram, German emigrants in 147 countries were sampled between August and September of 2020. The authors successfully recruited 3,816 members of their target population, most of whom lived outside of Europe and in countries where other sampling methods, such as register sampling, have presented coverage difficulties in recent research. Another hard-to-reach population, the LGBTQ community, was recruited by Kühne & Zindel (2020) using Facebook and Instagram. They recruited 7,129 respondents and found Instagram stories to be the most promising way to generate clicks (80% of clicks, 99% of those via smartphones). However, note that, as mentioned above, Meta no longer allows advertisers targeting based on political beliefs, religion or sexual orientation. Schneider & Harknett (2019) used the Facebook Newsfeed to recruit employees of 38 specific companies and collected 17,828 interviews. Another field where sampling respondents via social networks is popular is health sciences. Whitaker, Stevelink, & Fear (2017) lists a variety of studies that recruited respondents successfully using social networks.

Following this introduction, we will describe the most crucial steps to recruit respondents for a web survey through advertisements on Facebook and Instagram. We will then briefly present a recent study as a use case that is about sampling professionals in the German health care sector (Priebe, Silber, Beuthner, & Pöttschke, 2022). Finally, the guideline proposes reporting standards with respect to certain key parameters and a glossary, providing current definitions of the most important terms researchers will be confronted with when employing advertisements on Facebook and Instagram.

## **2 Developing a sampling strategy**

### **2.1 Targeting elements**

When planning the recruitment of survey participants through advertisements in Meta's SNS, it is essential to remember that the recruitment strategy consists of more than just selecting appropriate targeting variables. As Figure 1 shows, we can differentiate between two groups of targeting elements. While



primary targeting elements define whom scholars target, secondary elements, in which those are embedded from a technical point of view, determine where the recruitment takes place within the Meta environment.

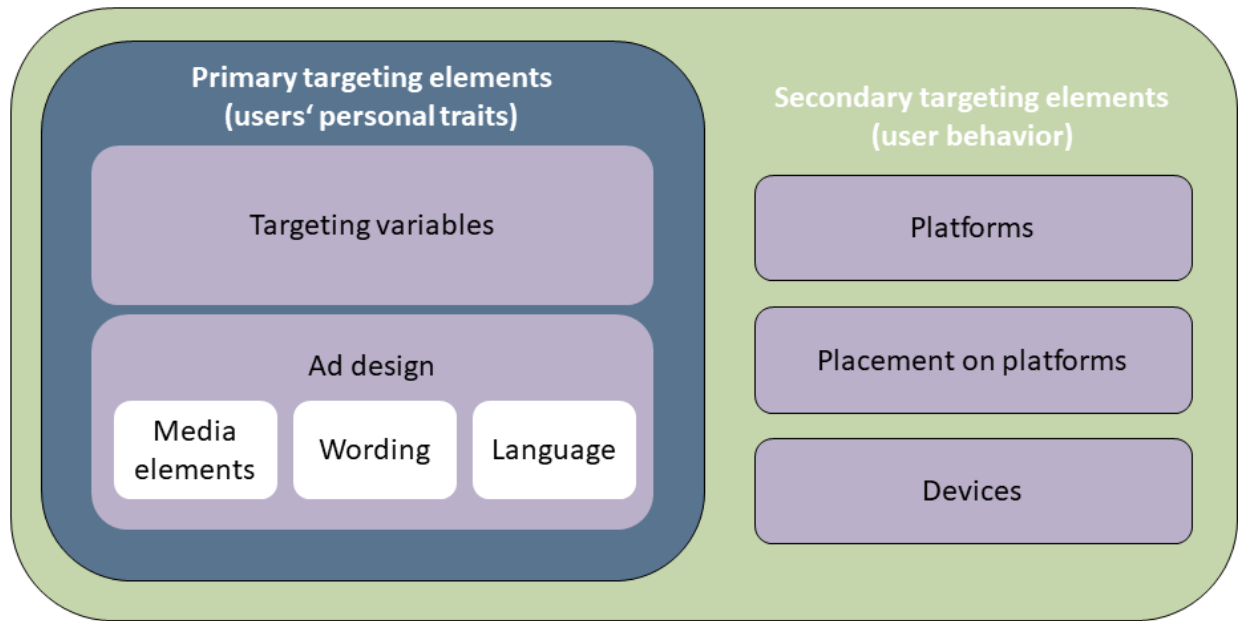


Figure 1: Targeting elements

In most cases, decisions taken with regard to primary targeting elements are likely to have the most profound impact on the success of a recruitment campaign. These aspects directly refer to users' personal traits, such as their profile information, interest, and language abilities. As mentioned above, the crucial advantage of using advertisements on Facebook/Instagram for the recruitment of survey participants consists in the fact that researchers can directly target specific subgroups within Meta's user base. In practice, this means that scholars decide to whom advertisements should be displayed by narrowing down the target population by specifying various attributes, such as specific gender or interests, that should apply to them. Meta offers a wide range of targeting variables to do so (see Section 3.2.2). However, at least as important as these variables are aspects of advertisement design. In this regard, scholars should remember that advertisements have to catch users' attention within an instant (Maslowska, Ohme, & Segijn, 2021). Since both Facebook and Instagram are very visual media, the selection of appropriate media elements, in most cases this will be pictures, is crucial. Hence, the targeted users should be able to directly relate to the picture, e.g., when targeting German health professionals this might be achieved by showing individuals wearing scrubs. Furthermore, the advertisements should be carefully worded, ideally clearly identifying the targeted group. Finally, language itself can be a decisive design element. This might be less the case in instances in which members of a country's general population are targeted but it could become important if the target population can be assumed to be fluent in a language that is only spoken by a minority of said country's population, e.g., when targeting Ukrainian refugees in Germany.

Secondary targeting elements can help to further broaden or narrow the target population as they relate to the way in which users engage with Meta's SNS. More specifically, scholars need to decide on the platforms (Facebook, Instagram and Facebook Messenger) through which they want to target users; in which specific elements on these platforms (e.g., feeds) ads should be shown, and whether users accessing SNS

on a range of devices or maybe only on mobile phones should be exposed to their campaign(s).

Decisions on primary and secondary targeting elements should, indeed, be seen as an integral part of the survey design and should not be left aside until the proverbial last minutes before the start of data collection. For instance, it seems obvious that the definition of the target population precedes the discussion of appropriate targeting variables. However, during the discussion of the available targeting variables, researchers might decide that additional questions should be included in the questionnaire to verify that participants belong to the target group or even to specific subgroups that are targeted separately.

## 2.2 Following the tailored design approach

On a more general level, it is highly recommended that researchers follow the tailored design approach, as outlined by Dillman, Smyth, & Christian (2014), when designing the different elements of their research project. An essential aspect of this approach is the recommendation to take a holistic perspective on the survey design process, “giving attention to all aspects of contacting and communicating with people” (Dillman et al., 2014, p. 16). This means that the different elements constituting a survey project should be well thought-out and employ a consistent design. In online surveys employing other, i.e., non-SNS-based sampling methods, these components usually consist of invitations and reminders, which might be sent via email or postal mail, the questionnaire, and, in some instances, additional information leaflets about the research project. When using Meta’s SNS for recruitment, relevant elements are: the advertisements, one or more Facebook page(s), and the questionnaire.

### 2.2.1 Advertisement(s)

In surveys using an established sampling frame, the first contact between researchers and potential respondents is, in most cases, established through written invitations either by electronic or postal mail. However, when recruiting participants by means of advertisement campaigns on social media, this function mostly falls to the ads themselves. Therefore, their design should be guided by the same basic principles as that of longer invitations which, according to Dillman et al. (2014, p. 374), should be engaging, inform recipients about the survey content and why they are invited in the first place. Figure 2 shows an exemplary Facebook news feed ad used in our survey of professionals in the German health care sector during the COVID-19 pandemic. This advertisement shall serve to illustrate how the mentioned aspects can be addressed. The names of the elements constituting this ad (printed in bold) follow Meta’s naming scheme.

As can be seen in this example, there are several elements in the advertisement that signal the topic of the survey: First to mention is the bold printed title that can be seen at the top. In fact, this element corresponds to the title of the Facebook page to which the ad is linked (see below, Figure 3). This title signals to users that the ad campaign touches upon working conditions in the health care sector, an aspect that is further clarified by the second bold text element (*headline*) in the lower third of the ad, which hints at a specific context (“during the pandemic”), in addition to, once more, underlining the work-related nature of the message.

The *primary text*, just above the picture, indicates whom the ad, and in extension the survey, is targeted at. Moreover, it does so in an engaging way by asking a direct question about their professional self-identification. Additionally, the short text further specifies what the ad is all about (namely, a survey) and asks the users reading it to engage in a specific behavior, i.e., to participate in said survey. This guidance as to what users who self-identify as members of the target population should do is reinforced by



Figure 2: Elements of a Facebook advertisement

the explicit invitation to participate in the *description* section at the bottom, right next to a button highlighting the possibility to learn more. Upon clicking on this part of the advertisement, users would then be guided to the landing page of the externally hosted survey questionnaire.

Note that, depending on a survey's target population and topic, it might be preferable or even necessary not to imply that users belong to a specific sub-population to avoid violating Meta's Advertising Standards<sup>3</sup>, which would prevent advertisements from running. For example, Meta's guidelines specifically state that ads must not "[a]ddress sensitive personal preferences and practices, such as sexual orientation or practice"<sup>4</sup>. Hence, if researchers would still be interested in recruiting members of the LGBTQ community, even though they cannot be targeted directly anymore, it would probably be advisable not to directly ask whether users belonged to this group but rather to state that the ads were connected to a corresponding survey. This means, instead of asking, for example, "Do you consider yourself part of the LGBTQ community?" a statement such as "We are surveying members of the LGBTQ community." might be used. See Zindel (2023, begins from minute 37:00) for a short elaboration on this issue.

Finally, the ad features a picture that is not only related to the project's topic but has been purposefully selected to capture targeted users' attention prompting them to pause for a moment, read the ad and, ideally, click on the included link. However, in most cases, it can be assumed that a single picture might not spark the interest of all target population members to the same degree. Therefore, we recommend using several images in any given recruitment campaign. Instead of pictures, other media elements, such as short videos, can be used. However, so far most academic research has opted to use static images (for an exception, see Northcott et al., 2021).

It should be mentioned, that the appearance of advertisements depends on the platforms (Facebook, Instagram, Messenger) and the specific placement (e.g., Facebook Feed vs. Facebook Market Place). While the appearance in each selected placement should be checked, we recommend taking the Facebook Feed as a template when designing the advertisements as it incorporates all the above-shown elements, some of which might not be included in other placements. If a campaign would be limited to Instagram and

<sup>3</sup><https://transparency.fb.com/policies/ad-standards/> (accessed on June 22, 2023)

<sup>4</sup><https://transparency.fb.com/policies/ad-standards/objectionable-content/personal-attributes> (accessed on June 22, 2023)

not include Facebook at all, we would likewise choose the placement incorporating the highest number of elements as a benchmark.

### 2.2.2 Facebook page(s)

All advertisements on Facebook have to be tied to a Facebook page. For instance, this could be the institutional page of a researcher's host university or institute. However, we strongly recommend setting up individual Facebook pages for every survey project and, in case of multilingual surveys, for each language. The use of several Facebook pages can also be necessary if a particularly complex recruitment is planned that involves a high number of advertisements. This is due to the fact that no more than 250 active advertisements can be commissioned for a single Facebook page unless scholars have previously spent more than US \$100,000 within one month on advertisement campaigns related to the page in question<sup>5</sup>.

The title of the respective Facebook page is, as mentioned before, an integral element of the advertisement(s). Besides using one or more project-specific pages we, therefore, also recommend to use the title under which the survey will be known to participants as the page title. However, this presupposes that the survey title is (a) short, (b) easy to understand, and (c) describes the survey's topic well. If either of these is not the case, an alternative title that fulfills these criteria should be used for the Facebook page. Figure 3 below shows a screenshot of the Facebook page that has been used in the aforementioned project on professionals in the German health care sector.

Comparing the elements shown in Figure 2 and Figure 3, it becomes apparent that not only the page title but also the profile picture, in our examples our institute's logo, reappears in the advertisement. If a generic page (e.g., an institutional one) instead of a project-specific one is used, this page's title and profile picture will feature prominently at the top of the ads, leaving only the (shorter) space under the picture (*headline*) to highlight the survey topic.

Furthermore, it should be considered that a click on the Facebook page title in the advertisement will guide users to the corresponding page. Linking a non-project-specific page to the ads in this way might confuse users.

From a practical point of view, setting up a project-specific Facebook page allows researchers to provide additional information on their project, the institution(s) conducting it, contact information etc. Hence, to a certain degree, the Facebook page might be considered an extension of the invitation, even though researchers should keep in mind that only a tiny fraction of survey participants are likely to have visited this page before completing the questionnaire (see also section 2.2 on the tailored design approach). Nevertheless, such pages allow scholars to provide more detailed information that would traditionally be found in an invitation letter or short project pamphlet. Using one or more project-specific pages, furthermore, allows the inclusion of a link through which users can directly reach the survey without returning to the advertisements. Of course, researchers should make sure that they can differentiate in their data set between participants who reached the survey directly through ads and those who came via a Facebook page. This can be accomplished by including additional URL parameters, which can be parsed by most survey tools (for more details, see Section 3.2.3).

Advertisements on Instagram can be tied either to a Facebook or to an Instagram page. However, using a Facebook page seems preferable as it allows researchers to provide users with a larger amount of information and, hence, with a more complete picture of their research project.

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<sup>5</sup><https://www.facebook.com/business/help/766697140509126> (accessed on February 27, 2023)



Figure 3: Example of a project-specific Facebook page

### 2.2.3 Questionnaire

The externally hosted questionnaire constitutes the final survey component. Since questionnaire design is not the topic of this guideline, we will not go into details in this regard. However, another guideline of this series discusses issues of question wording (Lenzner & Menold, 2015).

Besides the general quality of the survey instrument, the importance of the landing page, i.e., the page Facebook/Instagram users see first once they click on the survey link, has to be stressed. Keeping in mind that many individuals will arrive at this page only with the little information on the survey they gathered from the ads, this page should include a description of the survey itself and clearly specify the target population. In this sense, the landing page, very much like the Facebook page, serves as a component of the recruitment procedure itself. This is perhaps even to a higher degree the case than if other recruitment methods are used. Correspondingly, the landing page should also include information about the researchers and/ or the institution(s) conducting the research. Hence, this page needs to be carefully designed as it not only constitutes a screening element but also serves to (further) motivate members of the target population to participate in the survey. Finally, it should include the privacy and data security statement.

As it is the case in any self-administered survey, the questionnaire itself needs to include questions that allow researchers to verify whether individuals who completed the survey indeed belonged to the target population.

As discussed above, it is obvious that not all members of the general population can be reached through social media advertisements. Therefore, researchers might want to consider including a snowball element in their questionnaires to partially counter the expected sampling bias. While systematic research on best practice and the effectiveness of this additional element is lacking, its general idea can easily be implemented. At the most basic level, researchers can include a page at the end of their questionnaire explaining to respondents why broadening the group of participants is important to the research project and encouraging them to invite other target group members to the survey. To this end, such a page could include an additional survey URL. It should be specified that respondents may send this URL (e.g., through messenger apps or via email) especially to individuals who might not be reached through social media. However, as with the link included on Facebook pages, researchers should make sure that they can clearly identify those who participated through the additional snowball feature and distinguish them from individuals who reached the survey via advertisements (for more details, see Section 3.2.3).

## 3 Setting up a survey recruitment campaign on Facebook and Instagram

### 3.1 Prerequisites

Researchers need a Facebook user account *and* a Meta Ads Manager account to use Facebook and Instagram for sampling. The user account must belong to an individual and cannot be owned by the research organization, while the ad account can be set up for an organization. This has the advantage that other users can be added and receive permission to work on campaigns commissioned by the account. To create and monitor their advertisement campaign(s), researchers use the Facebook Advertisement Manager (FAM).<sup>6</sup> Through this web interface, campaigns on both major networks, Facebook and Instagram, can be

<sup>6</sup>[www.facebook.com/business/tools/ads-manager](https://www.facebook.com/business/tools/ads-manager) (accessed on February 24, 2023)

launched. Hence, the inclusion of Instagram in a sampling strategy does not require the use of a separate interface.

In the following, we assume that, in addition to having established an advertisement account, researchers have already set up the Facebook pages(s) needed for the project, composed the text(s) to be used in the ads, selected pictures (or other media elements) and have implemented the final version of their online questionnaire. The next steps involve deciding on the structure of the targeting campaign (stratification; see Section 3.2.2 for more details) and the distribution of budget across campaigns/ad sets/ads, which will be explained in the following section.

Hence, to be able to implement targeted ad campaigns, researchers need to familiarize themselves with FAM, the available targeting option and so on. As we try to avoid redundancies in these short guidelines, it might, therefore, be helpful for first time users to finish reading this text and explore Meta's web interface, before starting to implement their first campaign.

## 3.2 Implementing the advertisement campaign

### 3.2.1 Creating a new campaign

A Facebook advertisement campaign consists of three elements: campaign, ad set(s), and ad(s). A campaign is (usually) composed of several ad sets, which feature one or more ads (see Figure 4). This multi-layered structure is helpful as it allows the definition of certain general parameters at a global (campaign) level, while others can be modified to target multiple sub-groups through different ad sets (see below).

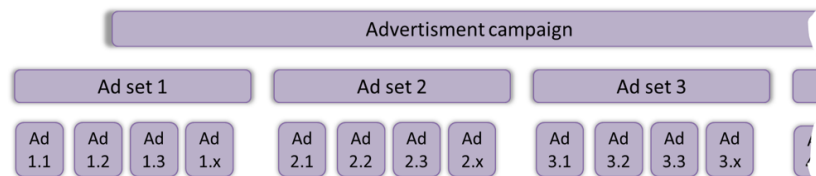


Figure 4: Structure of advertisements campaigns in Meta SNS

To create a new ad campaign, researchers must open the Facebook Ads Manager, click the 'Create' button and select a campaign objective (see Figure 5).

We recommend selecting the *Traffic* option, as this will aim to optimize the advertisements towards reaching a high number of clicks on an included link that guides users to an external website, e.g., the landing page of a survey. Most other campaign targets, such as *Awareness* or *App promotion* are less relevant for research purposes.

Some researchers have used the *Conversions* objective (Neundorf & Öztürk, 2023a; e.g., Rosenzweig, Bergquist, Hoffmann Pham, Rampazzo, & Mildenerger, 2020), which had been its own category until recently, but has been merged with others in the new *Engagement* objective in mid-2022<sup>7</sup>. Notably, implementing of a *Conversion* campaign involves the integration of code provided by Meta Platforms Inc., the so-called Meta Pixel<sup>8</sup>, in the survey page.<sup>9</sup> The Pixel code then sends information on Facebook/Instagram

<sup>7</sup><https://www.facebook.com/business/help/325793898950394> (accessed on February 27, 2023)

<sup>8</sup><https://www.facebook.com/business/help/742478679120153> (accessed on February 27, 2023)

<sup>9</sup>Practical guidance on this procedure is provided by Neundorf & Öztürk (2021).

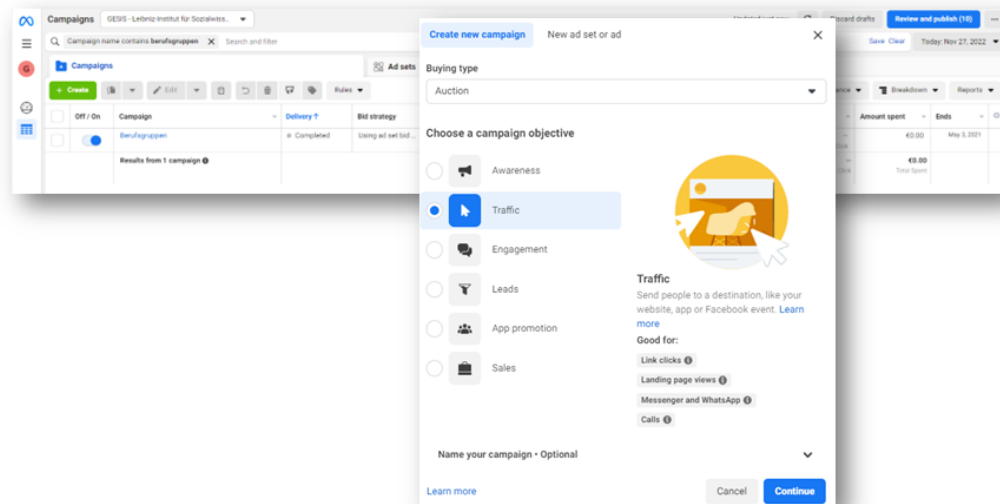


Figure 5: Setting up a new Facebook campaign

users' behaviour on the respective external website back to Meta. Neundorf and Öztürk describe how this technique can be used to refine ad campaigns by letting Meta's AI (artificial intelligence) know which users visited a specific page; in their case, this was the end screen of the survey (Neundorf & Öztürk, 2023b, p. 8) indicating that specific Meta users had completed their questionnaire. The AI then uses this information to optimize the targeting and display of advertisements. This procedure certainly has advantages that, in theory, might seem quite attractive to survey researchers. However, using Meta Pixel also means that researchers provide Meta with additional data on users of their products that the company would otherwise not be able to collect. Consequently, if researchers would want to use this feature, it seems, from a research ethical as well as legal point of view, indispensable to explicitly inform participants about it and to secure their consent on the use of Meta Pixel in addition to the general consent to survey participation.

Once a campaign objective has been selected, no additional information needs to be entered during the creation of a campaign. However, it is recommendable to choose a distinctive name for each campaign and to set a spending limit.

As soon as the campaign is set up, researchers can start creating ad sets.

### 3.2.2 Setting campaign parameters and selecting targeting variables

The majority of advertisement parameters are defined at the ad set level. This includes the days and exact time at which the delivery of advertisements should start and end (though setting an end date is optional), the budget that could be spent during this time, the target group, and the placement of ads on the different elements of the social networks.

Furthermore, at this point, researchers will have to specify whether they prefer to pay per every click performed on their advertisements or per 1,000 impressions. While most research projects thus far seem to have opted for payment per click, some have demonstrated that successful recruitment using payment by impression is feasible, too (e.g., Pötzschke & Weiß, 2021). Note that, when using a newly established Ads Manager account, payment per click will initially not be available (see Section 3.5).



The target group can be defined through a wide array of targeting options. On a basic level, researchers have to select one or more geographical locations. The spectrum in which these locations can be defined ranges from a radius of a few kilometers around specific coordinates or an address to sub-national administrative units, countries and the territory of supra-national organisations, continents or even the whole world. In addition to targeting users in specific locations, most studies use at least gender and age to define the target group of a specific ad set. Besides these basic aspects, Facebook allows more detailed targeting based on used language, other demographics (e.g., education, income), personal interests (e.g., hobbies, entertainment, sports, technology), life events (such as having previously lived in specific countries) and certain behaviors like the use of certain mobile device or travel activities. Please note that these targeting criteria might be subject to change<sup>10</sup>.

Once a target group is defined, the FAM calculates the potential reach of an ad set, i.e., the number of active users corresponding to the specified targeting criteria of the ad set.<sup>11</sup> This estimate, called *Estimated audience size* in FAM, is actually not presented as a single figure but as value range of which the lower and upper margin are given. This information allows for a first assessment as to whether targeting a specific sub-group of users might lead to an acceptable sample size. If this should not be the case, researchers can make adjustments and observe their effects on the potential reach (the reach for various combinations of target variables can also be requested via the Facebook Graph API; Araujo, Mejova, Weber, & Benevenuto (2017), provide a Python module called pySocialWatcher which can automate this process). Using the manual placement option, researchers can decide whether they want to display the advertisements on Facebook, Facebook Messenger, Instagram, or on all platforms and where on the platforms the advertisements should be displayed (e.g., Facebook Feed, Instagram Feed, Instagram Story; see FAM for all available placement options).

For researchers contemplating using this sampling approach, the importance of ad sets can not be overemphasized. As described, they allow the targeting of specific sub-groups through distinct advertisements. Consequently, ad sets are crucial to any stratification efforts because through them, it is possible to target, e.g., specific gender and age groups or users living in specific geographic regions etc. In this regard, it is essential to consider that, once an advertisement campaign has started, Meta's targeting algorithms will enter a learning phase. As a result of this procedure, they will increasingly start to display such ads which are best suited to achieve the defined campaign target. If the goal is to achieve a high number of clicks on the link to a website, the algorithm will, for example, increasingly display those ads of a given ad set that produce the highest number of such clicks. However, this can increase the bias of the resulting sample. Consider, for instance, a hypothetical case where a campaign does not use ad sets to target men and women separately. In this campaign, a high number of female users clicks on the link included in one specific ad. However, for some reason, that does not attract any clicks from male users and, at the same time, there is no other single advertisement that captures men's attention more than the others in the campaign. Hence, the mentioned advertisement that attracts many clicks from women outperforms all other advertisements in our hypothetical scenario. In this case, the resulting sample would be highly likely skewed towards women, even if the gender distribution in the targeted sub-population of users would be balanced because, over time, the FAM's AI would increasingly display this advertisement through which women but not men are recruited at the expense of all other ads in the same ad set. In a nutshell: researchers need to clearly indicate all relevant aspects

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<sup>10</sup>At the time of writing, more information about targeting options can be found on the following websites: <https://www.facebook.com/business/ads/ad-targeting> and <https://www.facebook.com/business/help/633474486707199> (accessed on February 24, 2023)

<sup>11</sup>More information on the *reach estimate* can be found on Meta for Developers at [https://developers.facebook.com/docs/marketing-api/reference/reach-estimate?locale=en\\_EN](https://developers.facebook.com/docs/marketing-api/reference/reach-estimate?locale=en_EN) (accessed on February 24, 2023). This website is part of Meta's Marketing API (application programming interface), which allows to automate marketing tasks using a programming language such as R or Python.

of stratification by using distinct ad sets for them. Naturally, the number of ad sets will multiply rapidly if several such aspects are combined. Hence, when deciding on the appropriate number of ad sets, several aspects such as the available budget and the estimated reach, have to be taken into account. The latter should not be too low as the advertisements will otherwise not be delivered. While it is not possible to define a clear threshold in this regard, previous research suggests that an estimated reach of fewer than 2,000 users per ad set might be problematic. Regarding the overall outcome of sampling efforts, the total size of the target group is, of course, also relevant. This means if a target group consists only of 10,000 users in total, less ad sets should be used than in cases in which the target group consists of 250,000 users.

### 3.2.3 Creating advertisements

After the ad set is defined, one or more ads can be created. To this end, the above-mentioned text elements (see Section 2.2.1) have to be entered in the corresponding mask, media elements (i.e., pictures or short videos) need to be selected, and the Facebook (or Instagram) page to which the ad should be connected has to be specified.

Another vital element that can be defined at the ad level are URL parameters. Provided that researchers' survey software allows recording them, we recommend making ample use of this possibility. URL parameters are short, predefined sets of information that are appended to the destination page's URL (GET parameters). For each observation in the final data set, they can clearly identify the specific ad on which the corresponding respondent clicked and the ad set to which it belonged. There are two types of URL parameters. Static parameters are defined by the researcher when implementing the ad set, while dynamic parameters are filled by Meta, when a respondent is redirected to the survey landing page. Figure 6 shows examples of static (a to e) and dynamic URL parameters (f and g).

In this example, which stems from our survey of professionals in the German health care sector, the value shown for parameter *a* specified one of several campaigns the ad set belonged to, *b* the region which the ad targeted, *c* the gender, and *d* the age cohort of users targeted by ads in this particular ad set, *e* the image contained in the ad, *f* the platform (Facebook or Instagram) and *g* the exact placement in which the user saw the ad.

To be even more specific, the value *img2* of parameter *e* in Figure 6 signals that the advertisement on which the participant clicked contained the picture designated "image 2" by the research team. Hence, all this information is registered automatically in the survey data set for each observation and allows researchers to ascertain the accuracy of their targeting. This information could not only be important to control in analyses for different stimuli participants received to participate in the survey but can also prove helpful to adjust targeting during the fielding period.

In principle, it is possible to use more than one media element and advertisement text (*primary text*, see Figure 2) in any given ad. If this option is chosen, the AI will initially display all elements at random and use the collected information to optimize the ad over time, meaning it will increasingly display the elements that produce the best outcome with regard to the defined campaign objective. Hence, in a *Traffic* campaign, this would mean the elements that lead to the highest number of clicks on the survey link. While this might be a nice feature for marketing purposes, from a survey researcher's perspective, it is crucial to know the stimulus that SNS users received and that turned them into survey participants as precisely as possible. Consequently, we recommend using only one version of the *primary text* and one media element per advertisement. If different wordings of the *primary text* are used within a campaign, separate ads should be created for each possible combination of texts and media elements. Hence, variation should be introduced within ad sets, not within single ads.

**Build a URL Parameter** ✕

To differentiate ads or links that point to the same URL. For example: white\_logo, black\_logo.

**Custom Parameters**

Parameter Name	Value
<input type="text" value="a"/>	<input type="text" value="cam2"/>
<input type="text" value="b"/>	<input type="text" value="reg1"/>
<input type="text" value="c"/>	<input type="text" value="gen2"/>
<input type="text" value="d"/>	<input type="text" value="age1"/>
<input type="text" value="e"/>	<input type="text" value="img2"/>
<input type="text" value="f"/>	<input type="text" value="{{site_source_name}}"/>
<input type="text" value="g"/>	<input type="text" value="{{placement}}"/>

**URL Preview**

```
https://www.unipark.de/uc/sarscov2/?a=cam2&b=reg1&c=gen2&d=age1&e=img2&f={{site_source_name}}&g={{placement}}
```

Figure 6: Definition of URL parameters

Once an ad has been created, it can serve as a template for additional ads, as it can easily be duplicated and modified. Likewise, ad sets and ad campaigns can be copied and adjusted.

A typical use case would be if men and women are to be targeted separately (FAM does only offer these two gender-based targeting options), keeping all other targeting criteria constant. In this case, scholars would first implement the ad set and all ads for one gender cohort, then copy the entire ad set, adjust the gender target parameter of the second ad set, and, if used, all relevant URL parameters in the ads it contains.

The FAM also offers an option to export a csv file of a given campaign. In such a file ad sets could, in theory, be duplicated and adapted more conveniently before being imported into FAM again. However, we would like to mention that this feature has - in our experience - produced unreliable outcomes in the past, which is why we refrained from using it.

Hence, at this point, it has again to be stressed that the design and implementation of the targeting campaign should, following the tailored design method, be seen as an integral part of the survey design process from the start of a project. This means that researchers should familiarize themselves with the available targeting options as early as possible in the process. They should then not only decide which targeting parameters are appropriate to reach the target group but also across which parameters the targeting should be stratified, using multiple ad sets and/or campaigns.

In this context, it is also essential to consider that, on the one hand, it might not be possible to target each sub-population of users that researchers might be interested in *directly*. For example, there is – for a good reason – no indicator identifying refugees. However, in line with the above argument that targeting consists of several elements, targeting parameters being only one of them (see Figure 1), recent research showed that Ukrainian refugees can successfully be sampled by combining the targeting of Ukrainian language users in Poland and Germany with specific ad texts and media elements (Pötzschke, Weiß, Hebel, Piepenburg, & Popek, 2022).

On the other hand, in some cases, existing indicators might not be assigned to all relevant users due to a lag of respective information on Meta's side. For example, when we targeted professionals in the German health care sector in a recent project (see the case study in Section 4 below), the respective indicator in the FAM put the number of Facebook and Instagram users working in the health care industry and living in Germany at 64,000 individuals out of 36,2 million users in total. Yet, it stood to reason that a higher number of Facebook and Instagram users fell in this group without being flagged as such. This was likely because many Facebook users did not provide information about their profession on their Facebook profile. Therefore, the research team decided to use different targeting strategies (see below) to increase the probability of reaching professionals in the health care sector who were not identified as such by Meta within their SNS.

After all ads are created, the campaign(s) can be published. At this point, the campaign(s) will automatically be reviewed by Meta for compliance with their Advertising Standards. We recommend to allow for no less than 24 hours for the review. If an ad violates said standards, this period can extend much longer, especially if a manual review is requested. Sensitive topics<sup>12</sup> like political issues or specific events like the COVID-19 pandemic can lead to an additional manual review by Meta (see Meta Advertising Standards)<sup>13</sup>. As mentioned above, start and (optional) end dates are set at the ad set, not the campaign level. These dates specify the beginning, and possibly end, of the period in which given ad sets should be fielded. To

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<sup>12</sup>For instance, in our study of professionals in the German health care sector, one initially submitted image displayed a syringe (see Figure 8). The AI classified the picture as showing a medical procedure and, therefore, flagged the ads showing a violation of the Advertising Standards. Consequently, their approval was denied.

<sup>13</sup><https://transparency.fb.com/policies/ad-standards/> (accessed on June 22, 2023)

account for the review process and possible complications, we recommend specifying start dates that are two to three days in the future at the time of the publication of a given ad set.

In our research, we found that ad sets that were automatically deactivated at a previously defined end date could not easily be reactivated. Even though it appeared to be possible in the FAM at times, the ads in question were often not delivered anymore. Yet, for different reasons, e.g., reallocation of funds, the option to reactivate ad sets can prove important at times. Consequently, we recommend *not* setting end dates and deactivating ads manually whenever feasible.

When advertisements start to be displayed to users, the above-mentioned learning period commences for the FAM's AI, during which it determines, based on machine learning, which specific ads work best within an ad set. Once the learning period is completed, the AI will increasingly display those ads within a given ad set that performed best depending on the defined advertisement goal, e.g., that produced the most clicks on the included link.

### 3.3 Field work

Once the ad campaign has started, a multitude of metrics are provided within FAM on a near real-time level. The corresponding overviews are highly customizable, Figure 7 shows a number of key parameters from the survey of health professionals.

Off / On	Ad set	Location (ad set settings)	Gender (ad set settings)	Age (ad set settings)	Reach ↓	Impressions	Unique outbound clicks	Amount spent	Frequency	Starts	Ends
<input type="checkbox"/>	male, 36-64, Rest, Gen. Pop.	Hamburg, Hessen...	Men	36-64	20,009	28,032	373	€78.69	1.40	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	male, 36-64, SL MV Bremen, Gen. Pop.	Bremen, Saarland...	Men	36-64	18,961	36,597	204	€81.05	1.93	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	male, 18-35, SL MV Bremen, Gen. Pop.	Bremen, Saarland...	Men	18-35	16,603	28,960	171	€79.26	1.74	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	male, 18-35, Rest, Gen. Pop.	Hamburg, Hessen...	Men	18-35	16,082	20,519	367	€77.77	1.28	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	male, 36-64, BY BW NRW, Gen. Pop.	Baden-Württembe...	Men	36-64	15,804	22,694	401	€78.78	1.44	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	male, 18-35, BY BW NRW, Gen. Pop.	Baden-Württembe...	Men	18-35	15,800	20,183	404	€76.74	1.28	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	female, 18-35, BY BW NRW, Gen. Pop.	Baden-Württembe...	Women	18-35	14,660	17,804	692	€77.24	1.21	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	female, 18-35, Rest, Gen. Pop.	Hamburg, Hessen...	Women	18-35	14,474	17,500	583	€77.15	1.21	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	female, 36-64, BY BW NRW, Gen. Pop.	Baden-Württembe...	Women	36-64	13,595	17,917	753	€79.45	1.32	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	female, 36-64, Rest, Gen. Pop.	Hamburg, Hessen...	Women	36-64	13,543	17,843	727	€79.69	1.32	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	female, 18-35, SL MV Bremen, Gen. Pop.	Bremen, Saarland...	Women	18-35	12,125	15,788	320	€77.62	1.30	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	female, 36-64, SL MV Bremen, Gen. Pop.	Bremen, Saarland...	Women	36-64	12,043	18,410	396	€79.23	1.53	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	male, 18-35, BY BW NRW, Interesse	Baden-Württembe...	Men	18-35	11,716	17,460	329	€79.27	1.49	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	male, 36-64, Rest, Interesse	Hamburg, Hessen...	Men	36-64	11,691	19,600	328	€79.18	1.68	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	male, 18-35, Rest, Interesse	Hamburg, Hessen...	Men	18-35	11,638	16,547	291	€78.74	1.42	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	female, 18-35, Rest, Interesse	Hamburg, Hessen...	Women	18-35	11,317	15,152	507	€78.53	1.34	Apr 13, 2021	May 3, 2021
<input type="checkbox"/>	female, 36-64, Rest, Interesse	Hamburg, Hessen...	Women	36-64	10,904	15,208	703	€79.47	1.99	Apr 13, 2021	May 3, 2021
<b>Results from 36 ad sets</b>					<b>301,403</b>	<b>641,300</b>	<b>10,661</b>	<b>€2,699.17</b>	<b>2.13</b>		
					Accounts Center acc...	Total	Total	Total Spent	Per Accounts Center...		

Figure 7: Selection of campaign metrics at the ad set level

The available metrics include, for example, the *reach*<sup>14</sup> of ad sets, the number of *impressions*, *unique link clicks*, and the *amount spent* on ad sets. The *reach* indicates how many users have received the advertisements of a particular ad set. Every user is counted only once per ad set, irrespective of how often they

<sup>14</sup>Note that this value differs in its nature from the before-mentioned potential reach (*Estimated audience size*). In contrast to the latter, this figure provides the exact number of user accounts to which ads were delivered.

received ads of this particular ad set. *Impressions*, in turn, signals how often the ads included in an ad set have been delivered to users. This number is higher than the former as some users might have received ads several times. However, it is important to note that this figure only means that ads have been featured in some element of Facebook or Instagram that the users have visited, e.g., their news feed. In contrast, it can not be concluded from this that those users have, indeed, seen and read the ads, as they are just as likely to have swiftly scrolled over them. Finally, *unique outbound clicks* shows an estimate of how many individuals have clicked on the links included in an ad set that took users outside the Meta environment (i.e., clicks on the link connected to the externally hosted survey).

If we take the first ad set shown in Figure 7 as an example, we see that its ads have been delivered to a total of 20,009 user accounts<sup>15</sup>. They have been included in feeds etc. 28,032 times resulting in approx. 373 clicks on the link to the survey landing page. As a total of €78.69 have been spent on this ad set, it can be concluded that the costs per click amounted to €0.21. Note that some of these metrics are not exact counts but estimates (see the glossary in Section 6). Besides the metrics per ad, set the table also shows a summary row. With regard to these figures, it should be kept in mind that not all individual figures might sum up to the shown totals. In the given example, for instance, the shown total for the reach indicates that the ads have been delivered to 301,403 users. However, if the individual figures of all 36 ad sets in this campaign are summed up, the grand total is 341,398. The discrepancy is not an error but due to the fact that some users, apparently 39,995 to be more exact, have received ads from more than one ad set. Similarly, figures provided for individual ads within a specific ad set might not sum up to the correct total at the ad set level. Hence, when interpreting or exporting these metrics – which is easily possible from the FAM – researchers need not only to select the relevant indicators but should also reflect on the appropriate aggregate level. During the lifetime of a recruitment campaign, scholars should carefully monitor these figures and adjust their campaign according to their research goals, target population, and budget. In addition to the statistics provided in FAM, Meta also offers a dedicated reporting tool that can be used to review outcomes in even more detail (e.g., by *placement* or *platform*). This tool can be accessed by clicking on the *Reports* button in FAM.

After a few days, researchers should also evaluate the budget of their ad sets. Meta sells advertisements based on an auction system, which adjusts over time. It is possible that the initial daily budget is too low to achieve the desired results in terms of reach, impressions, or link clicks. As mentioned above, URL parameters recorded in the survey data might provide additional information regarding the success and potential for optimization of an ongoing recruitment campaign and individual ad sets (see Section 3.2.3). Researchers may also manually deactivate advertisements that do not perform well. However, it should be noted that some of the possible adjustments might impact the algorithm that decides which ads will be displayed to whom and when; hence, after substantial changes to the campaign designs, researchers should always allow at least 24 hours for the algorithm to adjust and then review the results again.

Finally, it should be taken into account that Facebook users can post on the Facebook page of the project and below the advertisements. Researchers should, therefore, constantly check for such comments and their content. In many cases, users might have legitimate questions regarding the research project, which should be answered in a timely fashion. However, it might also be necessary to hide or delete inappropriate content, such as insults or hate speech. If project resources are limited and a reaction to individual comments is not feasible, researchers should establish a clear policy as to how comments will be handled before the start of a project (e.g., all comments will be hidden irrespective of the nature of their content).

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<sup>15</sup>Researchers should keep in mind that this figure approximates the number of reached users but is not identical with it because users might be counted more than once if they use multiple accounts.

### 3.4 Getting help from Meta

Meta provides extensive help (documentation, videos)<sup>16</sup> to commercial partners on how to use the marketing tools. An excellent introduction for (academic) researchers provides a DEMED<sup>17</sup> Webinar on Social Media as a Research Tool “Academic Advertising with Meta: Tips and Advice” by Michael Zoorob from Meta<sup>18</sup>.

Most issues that we encountered are related to disapproved ads (e.g., due to “sensitive topics”, see Section 3.2.3). Following the advice from the aforementioned webinar (starts at minute 36:00), the simplest option for getting help is to start with the account quality page<sup>19</sup>. Here, researchers can appeal with regard to a disapproved ad or ad account. A second option is the Business Help Center<sup>20</sup>, here, however, researchers have to have spent at least \$1 on their ad budget in the last few month. A third option is to contact the Academic Ad Support<sup>21</sup>, however, scholars should try the aforementioned two options first.

In addition, to targeting commercial vendors, Meta also provides help for nonprofit organizations<sup>22</sup>. Here, we would like to refer to a recorded series of videos (Meta’s Nonprofit Advertising Education Series)<sup>23</sup>. The webinar series consists of three parts: (1) Advertising Basics, (2) Creative Best Practices, and (3) Measurement.

### 3.5 Challenges

When planning to recruit survey respondents via SNS, researchers should be aware of some idiosyncratic challenges that usually are not part of a survey methodological playbook. The following list provides a compilation of issues that have already been mentioned as well as introduces some new challenges that we deem important when recruiting respondents for online surveys using Facebook and Instagram.

#### 3.5.1 Planning and study design

- (a) When designing and setting up an advertisement campaign, researchers should plan at least a week in advance. Setting up the Facebook page will take some time. Especially the ad review by Meta will take some time (at least 24h), and if ads are rejected, the process starts all over.
- (b) When starting with a new Meta Ads Manager account (or a payment mode), researchers should be aware that it might take some time (and money), before all marketing options become available. For example, the option to pay for advertisements per unique click (CPC, cost per click) is not available for ad sets commissioned by newly established Ad Manager accounts. Instead, only payment

<sup>16</sup><https://www.facebook.com/business/help> (accessed on February 27, 2023)

<sup>17</sup><https://www.gla.ac.uk/research/az/democracyresearch/> (accessed on June 22, 2023)

<sup>18</sup>[https://www.gla.ac.uk/research/az/democracyresearch/datamethods/socialmediaasaresearchtool/webinarseries/#29november2022-15h\(gmt\)%3Aacademicadvertisingwithmeta%3Atipsandadvice\(michaelzoorob%2Cmeta\)](https://www.gla.ac.uk/research/az/democracyresearch/datamethods/socialmediaasaresearchtool/webinarseries/#29november2022-15h(gmt)%3Aacademicadvertisingwithmeta%3Atipsandadvice(michaelzoorob%2Cmeta)) (accessed on June 22, 2023)

<sup>19</sup><https://www.facebook.com/accountquality> (accessed on February 27, 2023). Note: You need to log in to your advertisement account to access this page.

<sup>20</sup><https://www.facebook.com/business/help/support> (accessed on June 22, 2023)

<sup>21</sup><https://fb.me/academic-ad-support> (accessed on June 22, 2023). Note: You need to log in to your advertisement account to access this page.

<sup>22</sup>This information has been provided by e-mail on November 28, 2022, by Michael Zoorob (<https://michaelzoorob.com/>) from Meta.

<sup>23</sup><https://www.facebook.com/gpa/on-demand-video-library> (scroll down to “Nonprofit Organizations”) (accessed on February 27, 2023)

per impressions can initially be used. Please note that the explanation in the Meta Business Help Center (Meta, 2023a), at the time of the writing of this text, states that payment per click becomes available once a minimum amount of \$10 is spent on advertisements. However, it is our experience that the corresponding process is not immediate but can take up to several weeks.

- (c) Meta's targeting options are a huge advantage when it comes to inviting potential respondents. However, the targeting variables that Meta provides are by no means set in stone. Studies such as those by Guillory et al. (2018) or Kühne and Zindel (2020) that recruited members of the LGBTQ community, would today no longer be possible in the same way since Meta no longer allows advertisers to target based on sexual orientation (Isaac & Hsu, 2021; Meta, 2022).
- (d) We cannot give general advice regarding the use of a specific payment method. However, we observed that the use of direct debit from a bank account in combination with a new Advertisement Manager account resulted in frequent delays and interruption of the advertisement delivery process, which we did not experience when setting up two new Advertisement Accounts using payment by credit card.

### 3.5.2 Field work

- (a) Researchers should make sure to keep their payment data up-to-date, e.g., update an expired credit card as soon as possible.
- (b) We recommend deactivating the commenting feature on the Facebook page since it can be time-consuming to handle these remarks. However, since it is not possible to deactivate the recommending feature ads, these should be frequently/daily monitored, and, at least, such messages which are non-constructive should be hidden.
- (c) It is important to regularly check advertisement statistics provided in the FAM. Furthermore, we recommend regularly visiting survey-related Facebook pages, to check for possible messages by Meta. This is because Meta is constantly reviewing advertisements and related Facebook pages. In one of our recent projects, a Facebook page was deactivated during the recruitment process for a survey. Consequently, the delivery of all advertisements connected to the respective page were automatically stopped. Importantly, we did neither receive an email notification about the deactivation of the Facebook page or advertisements, nor did the FAM show an error message. Instead, the problem was only discovered when we realized that some advertisements were not delivered anymore and visited the Facebook page in an attempt to discover the reason. The reactivation of the page in question was achieved within 48 hours after contacting Meta following the steps described above (see Section 3.4).

Meta stated that the Facebook page in question had been deactivated because it had been flagged as "impersonating" the institution hosting our survey project (a North American university). The AI reached this conclusion as we used the university's official logo as a profile picture. Consequently, in informal communication with Meta's academic outreach team, we were informed that other survey projects had occasionally encountered similar problems and received advice to refrain from the use of official institutional imagery in profile pictures to avoid this problem in the future. However, from a survey research perspective, using of an institutional logo as profile picture has the possible advantage of lending credibility to advertisements. Hence, researchers should carefully consider whether to use institutional logos or project-specific ones as profile picture when setting up Facebook pages. Unfortunately, this guideline can only provide anecdotal information in this regard.



However, we encountered Facebook page deactivations so far only in one out of ten projects in which at least one of this guideline’s co-authors has been involved.

### 3.5.3 Technical issues

Meta’s server can fail. For example, on October 5, 2021, Facebook and all related platforms were globally unavailable for around 6 hours<sup>24</sup>.

## 4 Case study: Sampling professionals in the German health care sector

In a recent study at GESIS, we surveyed professionals in the German health care sector using advertisements on Facebook and Instagram for sampling purposes. The recruitment campaign was active from April 21, 2021, to May 3, 2021, while survey participation continued to be possible until May 10, 2021. A total of 36 ad sets was created representing a fully crossed combination of gender (male/female), age cohorts (18-35, 36-64), regions (three groups based on the federal structure of Germany), and three targeting strategies. The different targeting strategies were used to quasi-experimentally test different targeting options against each other. The first strategy (general targeting) did not use any specific targeting options beyond the above described. Hence, in this first case, the target population consisted of all Facebook and Instagram users living in Germany between the ages of 18 and 64. The second strategy (career-based targeting) narrowed this group down by only targeting those users who were categorized by Meta as working in the “Health care and Medical Services” industry. Finally, the third strategy (interest-based targeting) amended the targeting options of the first by the requirement that users were flagged as being interested in “Health care” or “nursing”.

The advertisements in all ad sets used the same text elements and pictures and were linked to the same Facebook page (see Section 2.2.1). Strategies two and three allowed us to target Facebook and Instagram users who were categorized by Meta as very likely belonging to our survey’s target group. By additionally employing strategy one, we aimed to recruit respondents who were members of the survey’s target group without being directly identifiable as such. For this general targeting, we assumed that due to the target group-specific text and media elements, users of the target population would be more likely to react to the advertisements than those with no interest in or personal connection to the health care sector.

The advertisement campaign used the *Traffic* objective. All ad sets employed the payment per click option in which the daily budget ranged from €5.95 to €11.90. The used advertisement budget amounted to a total of €2,699.17.

The advertisements were displayed in the Facebook Feed, Facebook Stories, the right column on Facebook (desktop users only), the Instagram Feed, Instagram Stories, and Instagram Explore. All advertisements used the above-described URL parameters, providing us with additional information regarding the recruitment process of each observation in the data set (see Section 3.2.3). We used five different pictures for the advertisements (two examples can be seen in Figure 8).

One originally submitted picture (see Figure 9) showed a health worker injecting a substance into a patient’s arm. This photo was rejected by Meta. Presumably, because the AI classified the image as showing a medical procedure. We requested a manual review, which, however, did not change that decision, so that the picture needed to be replaced.

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<sup>24</sup>[https://en.wikipedia.org/wiki/2021\\_Facebook\\_outage](https://en.wikipedia.org/wiki/2021_Facebook_outage) (accessed on February 27, 2023)



Figure 8: Example picture used in ad



Figure 9: Example of a picture rejected during the ad review process

The Facebook page of the study contained a short description of the project, a contact e-mail, as well as general information about GESIS, and the institute's address (see Figure 3). Additionally, a button leading to a second implementation of the questionnaire was included allowing visitors of the page to go directly to the survey. The second implementation was necessary to distinguish participants who reached the survey through the Facebook page from those who clicked on the survey link included in the advertisements.

Altogether, our advertisements resulted in 10,661 unique outbound clicks (i.e., cost per click = €0.26), and a total of 3,075 members of the target population completed our survey (i.e., cost per completed interview = €0.88). All but three of these individuals reached the questionnaire through the links included in the advertisements. Detailed figures referring to the different stages of the recruitment and survey process can be found in the flow chart in the Section 5 (see Figure 10).

The majority of respondents were recruited via Facebook (1,678), while 1,385 were recruited on Instagram (note that Figure 10 only reports the combined figures of both platforms). The most successful placement on Facebook was the Mobile Feed (93.4% of all Facebook completes), while it was Instagram Stories on Instagram (98.1% of all completes on this platform).

Comparing the quasi-experiment regarding the targeting strategy, we found both the condition without specific health care-related targeting and the one based on interests to produce the highest number of completes. The first targeting strategy achieved 1,504 completed interviews, and the third resulted in 1,406 completes. Interestingly, the condition targeting people that work in the health care industry failed to achieve a similarly high sample size, with 159 completed interviews. Ten days after the start of the recruitment campaign, we doubled the budget in the health care industry condition to see if we could improve the performance. However, doing so did not result in any substantial changes.

Of the five pictures we used, one was most successful throughout all groups with respect to completed interviews (98.1%). This successful picture displayed a stressed health worker wearing protective gear (gloves, glasses, and a hood, see right picture in Figure 8). However, it should be noted that the advertisements algorithm is designed to increasingly display those advertisements during the lifetime of an ad campaign that are most successful with respect to the defined campaign objective. In a nutshell: If several otherwise identical ads containing different pictures are combined in one ad set, the algorithm will, over time, favor those pictures that previously have worked well and will display all others less and less.

Finally, it should be noted that the other picture displayed in Figure 8, showing a health worker holding a vial labeled "COVID-19 PCR Test", led to provocative comments (e.g., referring to conspiracy myths) under the advertisements. However, advertisements were monitored continuously, and all comments were hidden, irrespective of their content.

## 5 Reporting and documentation

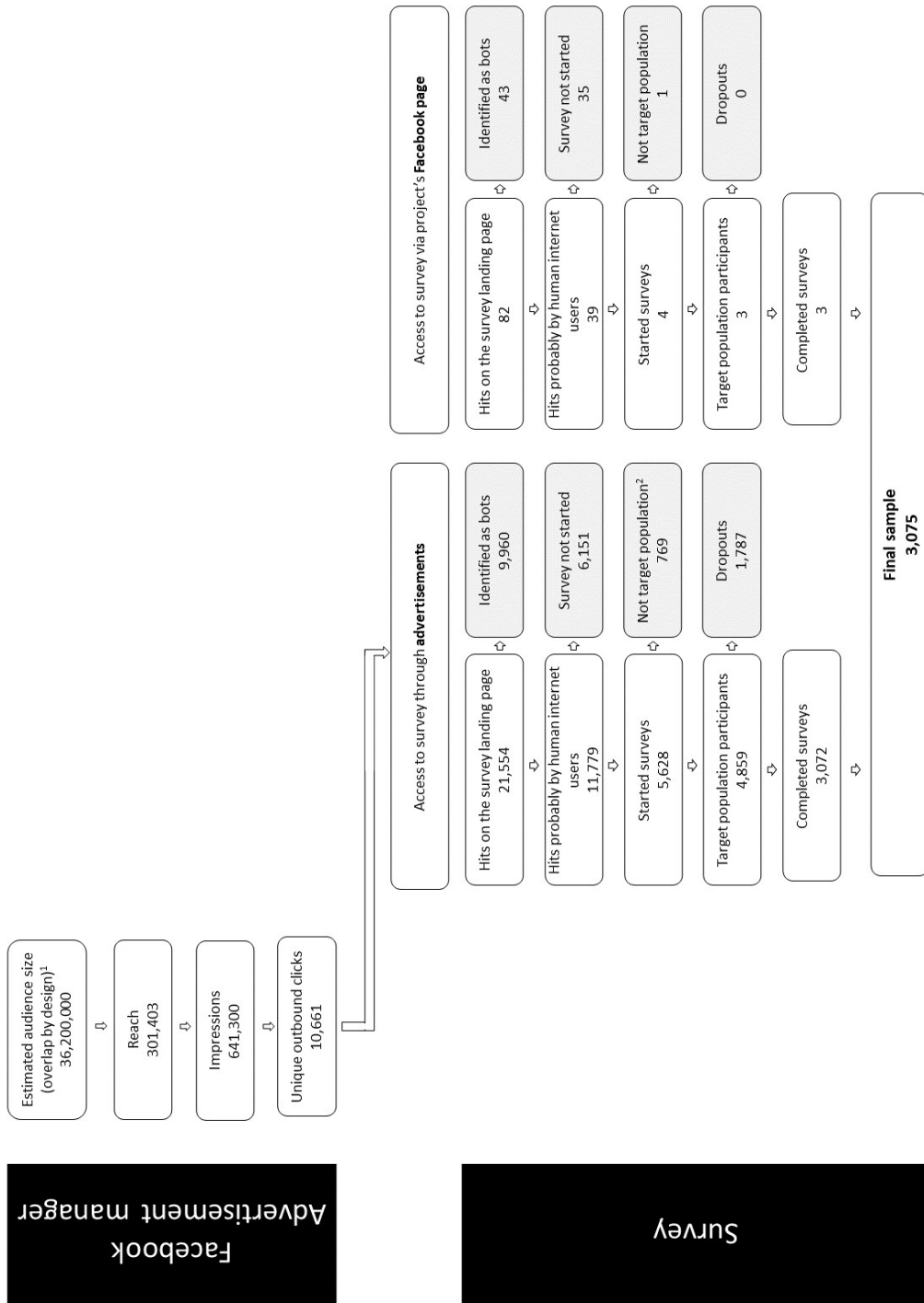
Reporting a project's methodological features is essential to any research endeavor, as results can otherwise not be fully understood or compared with other studies and might be misinterpreted. A separate guideline of this series (Schaurer, Kunz, & Heycke, 2020) provides an overview of aspects that should generally be reported for online surveys. With respect to surveys that sampled respondents through advertisements on Facebook and Instagram, additional information specific to this approach is crucial. The following list is not conclusive but specifies the information that we consider essential in this regard:

- Campaign objective (e.g., *Traffic*)

- Description of the targeting (i.e., used targeting variables, numbers of ad sets, and ads)
- Payment method (payment per click vs. payment per impression)
- Used ad budget
- Used budget type (daily budget vs. lifetime budget)
- Targeted SNS
- Used placements within the SNS
- Estimated audience size of the campaign (including the information on whether the risk of over-counting users was increased due to the campaign design)
- Total number of user accounts reached by the campaign (reach)
- Total number of times the ads were displayed (impressions)
- Total number of outbound clicks generated by unique users
- Number of respondents that started the survey
- Number of complete (valid) interviews
- Costs per complete (valid) interview
- Start and end date of the ad campaign
- Start and end date of the survey
- Example of at least one advertisement (i.e., screenshot including title, text, and media element)
- (Examples of) Used pictures

Regarding the estimated reach, which is provided in the FAM once the targeting and placement of an ad set are specified, researchers should be very specific. If several ad sets are employed, the sum of the corresponding figures might not necessarily refer to unique users but count some individuals several times. This is, for instance, the case in the study of professionals in the German health care sector discussed above. Such a situation might arise, for example, if specific ad sets are employed to target users on Facebook and Instagram separately. In this scenario, the same individual might be counted twice if they use both SNS.

Survey quality indicators, such as response rates, are usually an obligatory feature of any methods report (or corresponding section in a research paper) pertaining to a survey. However, so far, consent on calculating such measures similar to the standards established by AAPOR for other approaches has yet to be reached. Therefore, it seems all the more pertinent to present essential figures referring to individuals who (might) have been reached during the recruitment phase and to participants of the survey in a systematic way that allows for easy comparison across projects. To this end, we propose using a flowchart similar to the PRISMA model employed in systematic reviews and meta-analyses (Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group, 2009), which we took as inspiration. Figure 10 shows the corresponding flowchart for the above-discussed survey of health care professions. As can be seen, the graphic does include a fair share of the above-listed information.



Notes:  
<sup>1</sup> The project used a total of 36 ad sets which allowed for overlap in the targeting. Consequently, there is an increased probability that individual users are counted more than once in the presented figure.  
<sup>2</sup> This includes respondents who did not provide the necessary information to determine whether they belonged to the target population.

Figure 10: Flow chart displaying SNS-based recruitment of professionals in the German health care sector

The flowchart includes figures stemming both from the FAM (i.e., the sampling procedure) and the survey. However, both are clearly separated because they fundamentally differ in their nature. More specifically, concerning the sampling, researchers cannot ascertain whether the corresponding users belonged to their target population, except for projects that target all users of a given SNS. This is a crucial difference from other sampling procedures, such as telephone sampling, where identifying eligible and non-eligible contacts is a fundamental part of the method and its documentation.

Besides the survey responses collected directly through advertisements, we propose that other sampling avenues should be included in the flowchart, too, if they are used. For instance, this might include survey links that are provided on Facebook pages or recruitment through snowball elements in which respondents who were recruited through Meta’s SNS were used as seeds.

We provide an open-access template of the flowchart, which can be downloaded here: [https://doi.org/10.15465/gesis-sg\\_en\\_045.f](https://doi.org/10.15465/gesis-sg_en_045.f)

Both the proposed flowchart and the other above-mentioned information might be directly integrated into scientific papers or provided in (online) appendices or stand-alone methods reports.

## 6 Glossary

The glossary provided focuses on the most important terms a researcher is confronted with when using Facebook and Instagram for sampling. It provides the term, the official definition displayed in FAM as mouse-over information and information displayed when clicking on the *Learn more* option. Please note that the authorship for all texts provided in the *Definition* column of the glossary lies with Meta Inc. and that the texts constitute verbatim quotes at the retrieval date.

Label	Definition	Retrieved on
Accounts Center accounts	<p>An Accounts Center account refers to either (1) an individual Facebook or Instagram account that has not been added to the same Accounts Center as another account, (2) the two or more Facebook and Instagram accounts that have been added to the same Accounts Center.</p> <p>Accounts that have not been added to the same Accounts Center are counted as separate Accounts Center accounts, and accounts that have been added to the same Accounts Center are counted as one Accounts Center account. For example, if a person has one Facebook account and two Instagram accounts and they have been added to the same Accounts Center, they will be counted as one Accounts Center account. But if those same accounts have not been added to the same Accounts Center, they will be counted as three Accounts Center accounts.</p>	2023/06/23
Ad set ID	<p>The unique ID of the ad set you’re viewing in reporting. An ad set is a group of ads that share the same budget, schedule, delivery optimization and targeting.</p>	2023/06/23

Label	Definition	Retrieved on
Ad set name	The name of the ad set you're viewing in reporting. An ad set is a group of ads that share the same budget, schedule, delivery optimization and targeting.	2023/06/23
Amount spent	The estimated total amount of money you've spent on your campaign, ad set or ad during its schedule.	2023/06/23
Campaign name	The name of the ad campaign you're viewing in reporting. Your campaign contains ad sets and ads.	2023/06/23
Clicks (all)	The number of clicks on your ads. How It's Calculated: The metric counts multiple types of clicks, taps or swipes on your ad, including certain types of interactions with the ad container, links to other destinations, and links to expanded ad experiences.	2023/06/23
Cost per 1,000 Accounts Center accounts reached	The average cost to reach 1,000 Accounts Center accounts.	2023/06/23
Cost per outbound click	The average cost for each outbound click.	2023/06/23
Cost per result	The average cost per result from your ads.	2023/06/23
Cost per unique link click	The average cost for each unique click to link.	2023/06/23
Cost per unique outbound click	The average cost for each unique outbound click.	2023/06/23
CPC (cost per link click)	The average cost for each link click.	2023/06/23
CPM (cost per 1,000 impressions)	The average cost for 1,000 impressions.	2023/06/23
Estimated audience size	Estimated audience size is an estimate of how many Accounts Center accounts may meet your targeting criteria. It is based on factors such as targeting selections, ad placements and how many Accounts Center accounts were shown ads on Meta apps and services in the past 30 days.	2023/06/23
Frequency	The average number of times each Accounts Center account saw your ad.	2023/06/23
Impressions	The number of times your ads were on screen.	2023/06/23
Link clicks	The number of clicks on links within the ad that led to advertiser-specified destinations, on or off Meta technologies.	2023/06/23
Outbound clicks	The number of clicks on links that take people off Meta technologies.	2023/06/23

Label	Definition	Retrieved on
Reach	The number of Accounts Center accounts that saw your ads at least once. Reach is different from impressions, which may include multiple views of your ads by the same Accounts Center accounts.	2023/06/23
Results	The number of times your ad achieved an outcome, based on the objective and settings you selected.	2023/06/23
Unique link clicks	The number of Accounts Center accounts that performed a link click.	2023/06/23
Unique outbound clicks	The number of Accounts Center accounts that performed an outbound click.	2023/06/23



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