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OpenTextbook: An introduction to design a communication research study

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II

Research methods

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Foreword

THE AIM OF THIS BOOK, and of the teaching project it is a result of, is to explore the possibilities of which is known as a *living handbook*, or an interactive, ongoing handbook accessible online to be edited by authors and for consult for the scholarly community. It is also our goal to explore the ways of obtaining an *open textbook* out of some advanced versions of the living handbook – a more static output from a more dynamic one. We continue this way the production of materials to be used in the teaching of master programs on communication research, an effort initiated by producing a first output called *Methodos. Anuario de Métodos de Investigación en Comunicación Social* [*Methodos. Yearbook on Research Methods in Social Communication*], intended as a product of our concern on how to teach such courses.

This volume is an Open Textbook, in pdf format, which offers the initial contents to be provided as well in the living handbook online.

In this second number of the second volume, corresponding to 2021, we include some other advanced texts on methodology.

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Qualitative methods in communication research

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Qualitative methods in communication research

1. Definition

Qualitative research methods, especially ethnographic methods, are suitable for investigating certain aspects of communication, provided they are controlled with criteria of validity and reliability, and are especially indicated when applied to explain the behaviors, attitudes, ideologies, opinions and strategies of social groups, preferably when these social groups can be delimited, which is not always easy (the editorial staff of a medium, for example, is not the same as the audience of that medium), with whom one generally lives for a certain period of time sufficient to explain the aforementioned aspects, and to give evidence of the ultimate reasons for their behavior in certain situations and their behavior in public events.

Qualitative methods have advantages and disadvantages, which are summarized in this table:

Benefits	Weaknesses
Allows first-hand data to be collected	Time-consuming
Direct or quasi-direct testimony	Difficulties in testimonies (performance, concealment of the truth)
Confidence	Reservation on the part of informants
Appropriate for explaining conflicts and evolution	Danger of generalization (from case to universe)
Comprehensive social description	Possible bias due to self-prejudice

Source: Own elaboration.

2. Main techniques of qualitative methodology

2.1. Observation

Direct observation, carried out by the researcher or research group in situ over long periods of time, in a systematic manner, taking systematic notes according to the variables and categories established to provide a thick description of the research questions posed in terms of the general research problem, is the main qualitative technique, and the first that we will explain. Observation organizes perceptions, and is based on intensive coding and interpretation work. A good observation proceeds to a complete recording of each concrete activity, ceremony or behavioral norm. In addition, it questions the correlation of these institutions, and finally proceeds to a synthesis of the different aspects. This is a holistic technique, which understands that cultural manifestations must be taken as a whole (holism), so that the behaviors to be observed and interpreted cannot be isolated from the context.

In the following table we summarize the benefits and weaknesses that the application of this technique can bring us:

Benefits	Weaknesses
It offers the direct point of view of the observed person	It is time consuming.
Allows being a witness of the acts.	Own prejudices. Possible bias or distortion.
Allows comparison of situations.	Not always easy to distinguish facts and interpretations.
Indicated as an exploratory instrument	Risk of generalization from a single case.

Source: Own elaboration.

Basically, there are two types of observation, as we have already mentioned: participant observation and non-participant, endogenous or exogenous observation.

Participant observation is that in which the researcher or researchers belong to the organization under investigation. This type of observation may be necessary when no one who does not meet the researcher's requirements can gain access to the organization or social group under investigation, either for reasons of access restrictions or language and culture. For example, if we are to observe an indigenous community in order to explain their interpersonal communication strategies, we will

need to know their language and other cultural codes, which are either acquired (which is difficult when dealing with languages with a very small number of speakers or a low degree of grammaticalization and standardization) or obtained natively. Here it may be indispensable for the researcher to belong to such a social group. In turn, the observer may be identified as such by both the organization itself and the subjects to be observed, which is more desirable in ethical terms, and in any case must be negotiated with the organization to be investigated and, where appropriate, with the persons who will participate in the observation.

A non-participant observation is one in which the observer does not belong to the group or social organization to be studied, and therefore in the vast majority of cases he/she presents him/herself as the researcher at all times. There are, on the other hand, different degrees of participation, according to Spadley, 1980: Non-participation, passive participation, moderate participation, active participation, full participation.

In turn, observation can be overt or covert. The choice arises above all in participant observation, rather than in non-participant observation, but in any case the reasons and methods

for choosing one or the other must be agreed with the organization or social group to be observed. Another thing is that certain aspects of the dynamics of the observation may be hidden, for example, some recording techniques, so that they interfere as little as possible in a communication that should be immediate, i.e., have as many mediations as possible, in this case technical ones.

Every observation consists of several elements: the participants, i.e., the subjects observed, members of the social group or organization that is the object of our study. It is therefore advisable to have an organization chart in the initial stages of the observation, and even in a preliminary way, which is generally achieved with a previous documentary analysis of all those documents that refer to our object of study (a classification of these documents and a cross reading of findings from other techniques is advisable), until we reach a comprehensive synthesis that serves as a contextual introduction, and with a first contact interview with our liaison in the organization (a person who has a position of responsibility and a good degree of knowledge of the organization). If the organization itself cannot provide it, one of the first objectives of our research, and of the observation in particular, will be to draw up

such an organization chart, indicating the functions within the organization and the person or persons in charge of the organization. Therefore, determining which profiles and which persons we will subject to systematic observation for what period of time and under what conditions, which must be negotiated and agreed upon with the organization and with the subjects observed as precisely as possible, is a matter that must be established before proceeding to the observation itself.

The selection of what are technically called informants is extremely important, both in observation and in other qualitative techniques. It is necessary to identify which, in the organization, meet the requirements that bring them as close as possible to the required profile, which is usually related to the functions they perform within the organization. Other aspects should also be assessed: their willingness to participate, of course, the naturalness with which they will act, the degree of reserve in the transmission of information and, finally, whether or not they prefer to remain anonymous when the results of the research are finally presented and published. All these aspects should be negotiated with the informants.

The second element to be taken into account is procedure, how the obser-

vation is to be carried out: as mentioned above, for how long, under what conditions, on what terms, on which subjects, in which areas and activities of the organization, whether it is intended to attend certain routines (e.g., meetings, decision-making, etc.) and, for the research team itself, with what objectives.

Thus, the third element is the observation sessions to be carried out: duration and dynamics, and above all, which activities can be observed and recorded and which cannot. It is also important to consider the frequency and duration of the behaviors to be studied, until the key problem observed is found and identified. It is important that these points have been agreed with those responsible for the organization and with the subjects to be observed, who must be aware at all times and must have been fully informed that they are going to be observed. The research team must have their approval, whether it is a participant or non-participant observation. Any evaluative element or comment that could bias the observation should always be avoided.

The fourth element: the instruments to be used for data collection, which is the responsibility of the researcher, the organization and the subjects to be observed. First of all,

the researcher must design the documents to be used to record data and observations (memos), which will then be used to contrast them with the complete transcribed material, if a record is made of the sessions. These documents include a checklist and a script of the observation, maps, diagrams, photos, a diary or field notes (journal) and recording sheets. Normally, these record sheets have at least two columns, one for recording the facts or behaviors observed and coded, and the other for comments. Therefore, the second instrument normally used is one or more recording methods, such as video cameras or sound recorders. The subjects observed must know that they are going to be recorded in this way, and their approval must be obtained. Another thing is that these elements remain in sight or hidden, so that they interfere as little as possible in the naturalness of the reactions of the observed subjects, which is precisely one of the problems of observation. It is a matter of recording natural reactions in the usual context of the subjects within their organization, and therefore, in principle, situations are not artificially recreated. In general, the observer refrains from interfering with or questioning the subjects observed, because otherwise we would be using another technique: in-depth interviews, which can and often do

complement, and sometimes even replace, the observation itself when it is not possible to carry it out. Therefore, the idea is that there should be little mediation between observer and observed subject, or that, when there is, it should be as discreet as possible.

2.2. Observation in the digital environment

Until relatively recently, observation was necessarily applied in person, in situ: the observer went to the place where the situations he was investigating took place. The importance of the Internet, especially since the invention of the World Wide Web, has led to the emergence of new qualitative techniques. We will focus on two of them: netnography and virtual ethnography. The difference is explained by the creator of the former, Robert Kozinets:

Online ethnography and digital ethnography are generic terms for doing any sort of ethnographic work using some sort of online or digital method. When you use those terms, it is unclear what you have done in terms of what procedures you used, what the methodology is, such as what ethical guidelines you used for example.

(R. Kozinets, <http://kozinets.net/archives/475>).

Following Robert Kozinets himself, both disciplines can be defined as follows. Netnography is a set of online ethnographic procedures, which studies virtual communities and does so using online digital instruments, therefore the object of study and the techniques are in the virtual realm. According to Kozinets, netnography is characterized by a particular methodology, including its own epistemological context, a set of analytical frameworks about the virtual environment, and a set of consistent rules and guidelines for access, observation, data analysis, ethics, etc., all of which are specific to the virtual world.

In turn, virtual ethnography, a term coined by Christine Hine, is the method that considers virtual work as merely partial and incomplete. The object of study is usually a virtual community, which has its own distinct characteristics that we must necessarily take into account, but at a given moment it is not ruled out, and it is even considered advisable, to resort to the application of qualitative techniques such as those described in this lesson in a face-to-face, and not merely virtual, manner. For example, an observation of the virtual environment could be carried out, as well as a series of face-to-face interviews with the

people who participate in that community.

Netnography uses several methods, most of them adapted from the qualitative methods already used to analyze communities in person, but adapted to virtual ones and, according to Kozinets, they must also be applied virtually. The first method is online, web-based accounts, which are especially recommended for investigating patterns and attitudes, as well as for establishing some correlation of factors and variables. Social network analysis, which as we will see below is a technique that does not necessarily apply exclusively to digital social networks, but to the structure and relationship patterns of individuals and groups, is a particularly interesting technique when applied to virtual communities. In terms of qualitative methods *per se*, netnography uses observation, whether participant or non-participant (although the latter is particularly prevalent in virtual environments), and in-depth interviews, always conducted through online digital tools, with the phases of a netnographic study are summarized by Robert Kozinets himself in this schema:

Source: R. Kozinets, *Netnography*. London etc.: Sage, 2009

This approach must take into account some possible problems.

First, the alteration involved in acting in the physical world and the virtual world where, secondly, anonymity may be imposed and this may protect certain behaviors that would not be carried out in the same way if the participants did so in such a way that the rest would know their identity.

An additional problem is that the same person can use several profiles or nicknames. Only access to the log with the IP addresses of the machines that log in at any given time, which should be provided – there is usually considerable reluctance – by the system administrators can determine whether there is an IP address behind each user or whether the various pseudonyms use the same one,

in which case it is very likely to be a single person.

Thirdly, although it may seem in principle that access to virtual communities is easier, ethical conditions must be respected at all times, and to begin with the observer should identify himself as such, even if he is also a participant in the community.

And fourthly, and this is a common problem in the analysis of digital data of any kind (including, for example, messages from digital social networks), there is the strategy and tools (software) for collecting and storing these data, for which it can be useful to create a database.

Virtual ethnography attempts to circumvent some of these problems. According to its main architect, Christine Hine, the idea is to use ethnography to investigate those aspects in which the use of the Internet is socially relevant. In her view, this requires considering the Internet and other interactive media as both a culture with particular features and as a cultural artifact. Virtual ethnography is less concerned with virtual communities as websites than with the connections between nodes, usually individuals, which brings this technique closer to social network analysis.

The main difference from netnography is that what Hine calls the "eth-

nography of computer-mediated interaction" (or other types of devices) often requires the researcher to act both virtually and face-to-face. Not always, Hine insists, should the boundaries between the virtual and the "real" be taken for granted. He insists: virtual ethnography is not so much a prolonged immersion in a virtual environment as a process of intermittent engagement in them according to the needs of the research, although, he acknowledges, an intense engagement (focusing the research mainly, but not only, on the characteristics of interactive virtual communication) with measured interaction brings an important reflexive dimension. In any case, it is a partially virtual ethnography, based on the strategic relevance imposed by the specific research questions. Basically, she adds, virtual ethnography is a type of ethnography that adapts to the conditions of the object of study. To sum it up in Christine Hine's own words,

This is ethnography of, in and through the virtual - we learn about the Internet by immersing ourselves in it and conducting our ethnography using it, as well as talking with people about it, watching them use it and seeing it manifest in other social settings (Hine, 2004).

Christine Hine insists: the importance of developing an adequate presence of the researcher is crucial,

even more so when dealing with virtual environments, where there may be severe limitations and where negotiating the consensus of the subjects and groups studied is an ethical necessity that cannot be avoided despite the apparent facilities that technology allows us. The virtual, he concludes, is important insofar as it participates in the ecology of communication along with other types of media. Finally, he recommends combining virtual ethnography with content analysis of the messages that the members of that virtual community emit during the study period.

2.3. In-depth interviews

In-depth interviews (and life histories, which we will examine in the following section) are one of the most widely used techniques and offer the best results in qualitative research. Together with focus groups, they form part of what are known as conversation and narrative techniques. Their technique and structure differs significantly from the journalistic interview, although it is obvious that those who know how to conduct them with expertise have much to gain when facing an in-depth ethnographic or qualitative interview. These interviews are, in principle, focused and structured (or semi-structured, as we will explain

below), which are articulated around the categories of analysis).

As with each of the qualitative techniques we have examined, interviews and life histories have potential benefits and some weaknesses:

Benefits	Weaknesses
Direct interaction	Difficult to control veracity and therefore needs contrast
In-depth data	
Useful in different phases of research	
Interpretive	
Direct interaction	Difficult to control veracity and therefore needs contrast

Source: Own elaboration

Interviews, more or less focused and therefore with a questionnaire more or less structured around categories of analysis, can be of several types:

* Structured, semi-structured, focused or open-ended. The initial questionnaire of the interview can be strongly structured, to the point of

not admitting changes neither in the questions nor in the order of the same, therefore it is a set of closed questions. Surveys, in this case qualitative, are of this type. Semi-structured interviews, which tend to be the most commonly used, pose a series of questions generally organized around categories of analysis, the order of which may change as the interview progresses. In addition, some may be eliminated, others may be added, or several may be synthesized into a single one, depending on what the interviewee's answers suggest. Focused interviews -almost all qualitative interviews are to a greater or lesser extent focused on obtaining information on very specific aspects of the research study being carried out. Unlike life histories, these are not very open-ended questions that simply invite the interviewee to speak, but rather questions that seek very specific answers. Finally, open-ended interviews pose few, very general questions and seek equally extensive answers from the interviewee.

* Individual or group interviews: Individual interviews are conducted with specific people, who generally respond to specific profiles and therefore represent strata of a given universe. Generally, interviews are individual. The disadvantage is that one of the individuals in the group may predominate over the others or

condition their answers, as can occur in focus groups and discussion groups, with the difference that in the latter the participants do not know each other beforehand and therefore there are no synergies established beforehand among them. This same problem can arise in consensus methods, specifically in expert panels, which are usually face-to-face, also in the nominal group technique, whereas it does not occur in the Delphi method.

* Interviews can be thematic or about the interviewed subjects. In the latter case, they are generally life histories, which seek to gather information about the individual, while focused interviews are always thematic.

* Finally, according to their objective, interviews can be exploratory, when they are carried out in the previous phases of the research and seek to obtain information that will later serve to better design other central techniques in the design of the specific study to be carried out; descriptive, when they seek to have the interviewees provide general information on one or several aspects of the research; interpretative, in which interviewees are asked to explain specific aspects of the issues they are asked to address and to provide their own points of view; prospective, when - as is also the case

with the Delphi method, for example - interviewees are asked to provide future points of view or opinions about how things might develop for a given topic; and contrasting, when the aim is to compare and verify different versions or to confirm certain data previously obtained with other interviews or other research techniques.

The techniques for conducting qualitative interviews include several phases, which are described below:

As a previous phase, and before carrying out the conversation with the interviewee, the interview must be organized, which in no case should be improvised on the fly. This phase, in turn, includes several operations:

1. Description of the objectives, which will generally coincide with some specific ones of those previously described for the research as a whole. The objectives guide the structure and direction of the interview.

2. Definition of the profiles and selection of informants: The interviewees respond to profiles, therefore they represent certain strata of the universe to be studied. For example, it is not a question of interviewing each and every journalist in a newsroom, but those who respond to certain characteristics, in the belief that their answers will be similar to those of other individuals in the

same group and will therefore represent the group as a whole. A necessary operation is the definition of these characteristics. The next step is to select, from among all possible informants, the best informants. Some criteria are: consider the best informed, the most empathetic, the most accessible.

3. Organize the questions of the questionnaire, taking into account the type of interview, according to categories of analysis, which will then be used to transcribe the interview in an organized way and to proceed to its systematic analysis, for example using CAQDAS (Computer-Assisted Qualitative Data Analysis) software, such as QDA, NVivo, Atlas.ti or TAMS Analyzer.

4. Writing the questionnaire, which is generally a document for the interviewer's use and which is not provided to the interviewee beforehand so as not to compromise the naturalness of the answers, unless otherwise negotiated.

When conducting the interview normally these phases are followed:

1. Presentation of the interviewer and the research: it is explained succinctly and clearly what it is about and what is the research for which the interviewee's answers will be used.

2. Purpose of the interview.

3. Selection and presentation of the interviewee: explain why he/she has been selected, what profile is expected and invite him/her to make a brief presentation of his/her person: name, position in the organization, academic and professional background.

4. The rules governing the interviewee's possible anonymity and confidentiality are established: whether or not his or her name and position may be mentioned, how he or she will be identified alternatively (for example, with a code according to his or her profile), and what data may or may not be used and how. Eventually, the interviewee may be asked to sign an ethical document that commits both parties, especially the interviewer, for the transfer or not of the interview transcript to other researchers in the group or outside the group, use in research other than the original one, etc.

5. Permission is requested to record, and the method, the session is explained, and a maximum time is agreed upon, which generally will not exceed 90 minutes in any case, also for reasons of fatigue and repetition.

The following is an example of such an agreement:

<p>Name interviewee (or legal guardian):</p> <p>_____</p> <p>DNI (or NIE or Passport):</p> <p>_____</p> <p>Date of Birth:</p> <p>_____</p> <p>I freely agree to be interviewed by</p> <p>_____</p> <p>Name of interviewer:</p> <p>_____</p> <p>DNI (or NIE or Passport)</p> <p>_____</p> <p>Within the framework of the research</p> <p>_____</p> <p>The research team agrees to:</p> <p>1. To use the interview data for scientific purposes.</p> <p>2. To respect the anonymity of the informant in case he/she requires it.</p> <p>3. To provide a copy of the transcript so that it can be reviewed by the informant.</p> <p>Which we sign at _____, to</p> <p>_____.</p> <p>Interviewer's and Interviewee's signature</p>
--

6. The topics to be dealt with are advanced.
7. The interview itself proceeds and the questions are formulated. Finally, a brief closing of the interview

is made and the interviewee is invited to add whatever he/she considers appropriate. It may even be agreed with the interviewee that a first transcript of the interview will be sent to him/her for the sole purpose of correcting errors, not to modify what has been explained.

Structure of the interview

The parts of which an interview itself may consist are the following:

1. Introduction, as we have pointed out.
2. Proper questions or questions to discover and develop other questions. The rule is to provide a free stimulus and obtain a structured response or a structured stimulus and a free response, in the semi-structured interview, while in the structured interview it will be sought that both the stimulus (the question) and the response are structured. The questions can be, in turn:
 - 2.1. Comparative: the interviewee is invited to compare and evaluate situations.
 - 2.2. Questions in which the interviewee is asked to recall certain issues from the past, more or less recent.
 - 2.3. Questions about affective reactions or attitudes.
 - 2.4. Questions in which the respondent is asked to establish cause-effect

relationships, or other types of relationships (consecutive, simultaneous, contingent or necessary, etc.) between variables.

2.5. Questions in which complementary information is requested.

2.6. Conditional or hypothetical questions.

2.7. Probing questions, in which more information is gathered about other issues that will appear in the interview.

3. Strategies, including:

3.1. Silence, which generally seeks to invite the interviewee to continue.

3.2. Elaboration: the interviewer re-elaborates the information provided by the interviewee, systematizes it, and brings it up again for confirmation or further elaboration by the interviewee.

3.3. Assertion and repetition, to ensure that the interviewee feels secure in his or her statements and continues with his or her explanation.

3.4. Recapitulation: At certain times, when it is considered appropriate and more productive, the interviewee is invited to return to certain questions whose initial response was not complete or satisfactory.

3.5. Request for more information, and even for documents or data.

3.6. Change of topic, when signs of discomfort, saturation, fatigue or doubt appear.

3.7. Conversation after the interview, at a time when the interviewee is more relaxed and can help us to clarify certain concepts or understand the reason for certain answers. this moment is not usually recorded and therefore will not be included in the transcript, but it helps the interviewer, who is recommended to note down the substance of this post-interview conversation, to give meaning to the subsequent work.

Throughout the interview, it is important to maintain a neutral, facilitating, receptive attitude, so that the answers are not conditioned by the questions. The space will be the one agreed upon by the parties, but it should be comfortable, without noise or interference, well lit, where confidentiality can be maintained, so it is best to avoid public places unless proposed by the interviewee.

2.4. Life histories

Life histories, in turn related to the interview and conversation techniques of oral history (there is a magazine with this name, *Oral History*, and several key books, such as Ronald Fraser's 1979 book *Recuérdalo tú y recuérdalo a otros*,

which collected testimonies of reprisals and descendants of reprisals from the Spanish Civil War), are the other major qualitative technique based on conversations and narration.

Its origin is the book by William I. Thomas and Florian Znaniecki's 1929 book *The Polish Peasant*.

Description: This is the narration that one or several people, simultaneously or consecutively, individually or in groups, make of their lives or significant passages of them, related to the object of investigation, generally through a series of interview sessions with an open format and little structured a priori, since it is about the interviewee expressing him/herself freely. It is a technique that is generally applied longitudinally, since it requires sufficient time, while in-depth interviews are usually carried out in short periods of time, if not simultaneously (for which a team of interviewers is required), then practically simultaneously.

The structure of life histories is related to the fact that the interview is not previously structured does not mean that there is no structure, organization and order in the process of transcribing the interviews and preparing the documentary corpus. The researcher needs this structure, just as he/she needs categories of

analysis. It is simply recommended that when conducting the interviews, in order to obtain the desired information, an excessively regimented session should not be planned, so as to achieve a fluid and complete account of broad passages of the life of a series of people, which is why a distinction is sometimes made between life histories and life stories, depending on whether the aim is to explain a whole life trajectory or passages of it.

Biograms, or visual representations of a professional or biographical trajectory (in this sense, studies on career research, which refer strictly to professional trajectories, are also interesting), where the times and even the spaces of the biography of a person or a group of people are shown graphically. As we have said, this technique can be interesting to explain professional trajectories (for example, of journalists) that serve as a model and stimulus for future professionals that we prepare in our Journalism studies, and sometimes they can also be used, together with other systematic data (studies, properties, family relationships, positions held, professional activity, works) of that social group, which in historiography are called collective biographies or prosopographies, of which biographical dictionaries are representatives.

Such persons can be considered particular universal samples longitudinally, because such informants integrate both social spheres and personal attitudes, concrete trajectories and not structural abstractions. Informants are sought who provide processes of individual or group adjustment and maladjustment (the purpose of this technique, like the other qualitative ones we examined, is always in relation to social groups), and who also provide a trajectory with clear turning points.

It is usually accepted convention that a life story refers to a social phenomenon that is the object of our research. We may find that we will have one or multiple stories at the end, not only because we will have several people's versions of the same event, but also because a single person's accounts may contain several stories, either intersecting or parallel.

This is not an easy technique. It can be appropriate for the formulation of hypotheses, and therefore be used as a technique to be applied in preliminary phases of the investigation. It provides a wealth of contextual information, so it serves as both a primary and a complementary technique.

The benefits and weaknesses of life stories are summarized in this table:

Benefits	Weaknesses
Relatively fast method	Different levels of participation
Unexpected data	Possible group effect
Costs to be borne	Different individual skills
Rich responses	Disjointed or difficult to structure responses
Social discourse	Strictly personal discourse

Source: Own elaboration

When dealing with past events, where it is obviously not possible to schedule a participant observation, it can replace this technique. On the other hand, it is difficult to obtain good informants, partly because of age, social situation, lack of representativeness, poor communication or unproductive stories, as well as the danger that certain characters may seduce the interviewer with their story, who will find it more difficult to maintain an attitude of neutrality that would be shown in an in-depth interview, where the subject matter is more important than the personal circumstances of the interviewee. The interviewer's impa-

tience to obtain relevant information tends to work against him/her, and in turn may arouse suspicion in the interviewee.

Regarding the preparation of the interviews to be carried out in a life history, the phases would be as follows:

Preparation of interviewee profiles and selection of informants, with criteria similar to those already discussed for qualitative interviews.

Motivation of the participants: This must be clearly established. Since these are long conversations, where profound aspects of life or significant (and perhaps conflictive) passages of the life of one or more people will be revealed, they must feel sufficiently motivated to participate effectively in the sessions. The reward is not, unlike in the case of discussion groups or focus groups, an economic incentive, but rather personal satisfaction should be sought: to recover valuable data or experiences from oblivion, to bring to light issues of history that have been forgotten or not given sufficient importance, or reasons of a personal nature.

Establishment and negotiation of the dynamics of the sessions: Place, number of interviewees, how the interviews will be conducted (individually, in groups), whether the interviewees will know if there will be

other interviews and to whom (depending on whether this may in turn condition participation and responses), how many sessions will be held, whether this decision is left open or decided from the beginning, how long each session will last approximately.

The structure of the sessions should be as follows:

1. Introduction: the interviewer is introduced, the purpose of the research and the destination of the interviews are briefly explained, the interviewee is invited to introduce him/herself.

2. The interviewee is invited to speak freely, by means of a questionnaire composed of few and brief questions, in which the interviewee is invited at all times to direct the sense of the story. Images, letters or documents can be used to stimulate memories. The interviewee should not be asked to provide us with concrete data that can be obtained in another way, for example by consulting documents, but rather to confirm them; bear in mind that a long time may have passed since the events occurred and that human memory is fragile. Pressuring the interviewee to verify these facts may result in a loss of confidence on his or her part.

The interview should be conducted in an unhurried manner, with no

limitations other than those imposed by the interviewee. Normally, the usual duration is between one and two hours, with possible breaks. The aim is to build a relationship based on trust and respect. We usually proceed from the general to the specific. At all times, we will avoid asking questions that in any way already include the answer. Rather, it is about invitations to talk, focusing on certain topics or aspects. Questions with a yes or no answer should also be avoided as much as possible. In any case, when appropriate, we will try to collect details for the contrast, without too much insistence.

3. A closing of the session, with a brief recapitulation by the interviewer, thanks from the interviewer to the interviewee, an invitation to add what he/she wishes, and a summons, if so agreed, to a subsequent session, for which some of the topics to be addressed are advanced.

2.5. Focus groups

A possible definition of a focus group is a socialized and focused conversation, conducted by a researcher, with a group of people who are invited to freely express thoughts, feelings, mental structures or attitudes on certain issues, and to interact within the group, in order to reproduce in some way the social dialogue. It is a collective dialogue in

which interaction predominates, where the aim is to focus on certain issues and go deeper into them, as well as to record reactions to certain questions that are raised. At the end of the sessions, the aim is for homogeneity and even consensus to appear where initially, even because the participants must not have known each other beforehand, there was heterogeneity.

It is difficult to establish the difference between a focus group and a discussion group, because these terms, and even the term group depth interview, appear as synonyms in the translations of the English-language literature on the topic. In principle, the focus group tends towards the characteristics of a group interview together with openness to the interactivity of the participants, so it differs from the group interview in that it is aimed at getting people in the group to interact, and not just to answer questions individually. Discussion groups adopt more flexible forms in their sessions, less directed than focus groups, which are guided by a questionnaire established by the researcher around previously established variables.

These techniques place the emphasis on group dynamics and interaction as relevant social characteristics, and therefore try to reproduce these dynamics in a few sessions, focusing

on the aspects and variables considered relevant to the research.

This is a technique that is important in marketing studies, a field for which it was devised in the United States in the 1920s. The study by Lazarsfeld, Jahoda and Zeisel on the unemployed people in Marienthal is usually considered the first antecedent of a focused group, and the 1956 work by Merton, Fiske and Kendell. The focused interview is usually considered the first manual on the subject.

This technique, valid above all to explain certain aspects, i.e. categories of our research, consists of bringing together, in one or several sessions (not many, because the factor of dominance of some participants over others may appear), several people to interact with each other on the basis of questions formulated by the research group, under the moderation of a researcher of the same who guides the debate towards these categories. The participants, who should not know each other, in principle, to avoid synergies and previous influences, should respond to profiles or population strata; in some way, they represent the study universe, because they meet the characteristics of this that make us talk about variables such as age, study, exposure to the media, level of studies, income, etc.

This technique is particularly useful in an exploratory stage, especially when, in a mixed methods strategy, it is intended to carry out some kind of survey on the entire population, since it allows weighting the weight of the study categories and improving the preparation of quantitative techniques. An important differentiation, as some specialists say, is that learning a technique (survey) is not the same as learning a practice (focus group). “A practice is only learned by doing” (Callejo, 2001). “Neither the groups nor the data speak for themselves. They speak through that knot of processes that is the researcher,” he adds. Likewise, it can be a technique with more weight in the research design, even in this case after a quantitative stage, because it helps in the interpretation of the variables and categories of analysis that the qualitative data have yielded. Discussion groups and focus groups help us to understand the how and why of the aspects we are studying, and thus help us to answer research questions rather than to resolve hypotheses. In this, they coincide with most of the qualitative methods we explain.

This table summarizes the benefits and weaknesses we may face when using this technique:

Benefits	Weaknesses
Assists in hypothesis formulation (rather than resolution)	Good participants are scarce
Useful for observing social behavior. Can provide data not initially contemplated	It is not easy to control information
Useful for measuring moments of change and social discourse	Not adequate if you are impatient in obtaining results
Can even be used as an auxiliary or complementary technique	Unequal participation and group effect
Speed and moderate cost	

Source: Own elaboration

The phases in the organization of a focus group are as follows:

1. Description of the goals

Description of the objectives to be achieved through this technique, which are normally already included in the research report.

2. Description of profiles

Description of population profiles and strata and of the characteristics

that the participants must meet, according to the objectives, the research questions, the variables. Selection of informants should be made according to relevance rather than statistical criteria; a limited number of people, if they are well informed and observant, gathered for group discussion is more useful than a representative sample. It should be avoided as much as possible that they know each other previously and thus have established synergies. Participants who are thought to have a strong influence on the opinions and attitudes of the other participants should be excluded. A balance should be sought between homogeneity (that the participants belong to the same group and therefore feel that they can talk to each other, that they do not feel strange) and heterogeneity, because they represent different profiles. Normally, participants are incentivized with a small gift to prevent them from missing subsequent sessions. In principle, groups are organized with no more than 6 to 8 people. If, for reasons of stratification, more people are needed, it is better to hold other sessions.

3. Questionnaire

Organization of the questionnaire around the categories of analysis.

4. Scenario

Preparation of the place where the sessions will take place. It should be a neutral, quiet space, better if it is designed for this purpose (so that from an adjoining room and through an opaque glass for the participants -who will be aware of this circumstance- other members of the research group can follow the session). All participants should be at the same level so that they are given equal status.

5. Development of the sessions

a. Presentation: Name of the moderator, explanation of the objectives of the research, expected results, confidentiality criteria, number of subsequent sessions, time expected to be devoted to the present session, whether or not they will be recorded (and request permission, although this should normally be obtained in writing beforehand). Attendees will be invited to introduce themselves in turn.

b. One or more short questions to break the ice and encourage participation. The skill of the moderator, in this phase as in others, is crucial for the smooth running of a discussion or focus group. It is recommended not to use directive strategies, but to let the dialogue flow, although it is recommended to redirect it so that it does not go beyond the issues raised.

c. Development of the session itself, according to some general guidelines:

- It is recommended to go from the general to the specific.
- It is recommended to avoid self-answering questions, that is, questions that somehow contain the answer.
- It is recommended to avoid questions that are answered with a simple yes or no answer.

d. At the end of the session, the moderator will try to offer a synthesis that will include above all the points of agreement but will not forget the differences. If more sessions are needed, this is the time to recall them. In total, the session will normally last between one and two hours, avoiding saturation and fatigue at all times, because they can bias the results.

6. Treatment of the results

As for the treatment of the information obtained through these groups, it is advisable, after transcribing the information according to the criteria to be determined (literal or not, complete or not), to segment the information according to the categories of analysis in order to proceed to its coding. The participants will also be coded; they will not be identified by name since they respond to population strata rather than to their own personal ideas. As

in other qualitative methods, CAQDAS programs (NVivo, Atlas.ti, QDAMax...) are suitable for data processing and analysis. The final report will also reflect the detailed explanation of the sample, script and conditions of realization.

2.6. Delphi and other consensus methods

There is another series of methods that consist of bringing together various specialists on a very specific subject (that is why they are group techniques), who are asked to give their opinions by means of a questionnaire or other techniques, as we shall see, so that at the end of two or more rounds a report can be drawn up that reflects their points of view but, above all, the agreements they have reached. For this reason they are called "consensus methods", because the aim is that, after a process of dialogue and negotiation, they reach some kind of agreement on the subject matter of our research or some of its aspects, and may even issue recommendations or lines of action in this respect. These methods are particularly suitable for carrying out evaluations of certain aspects of the research.

2.6.1. Delphi method

The best known of these methods is the so-called Delphi method. Its

origin is not the academy, but the private company, specifically the American Rand Corporation, in 1944.

Description: it is a technique designed for the prediction of scenarios and for the issuance of recommendations for action, in principle. Also for the diagnosis of social situations, for example research problems. Its objective is, as has been said, for a group of specialists to reach an agreement, reducing dispersion - and thus focusing the issues - while maintaining an acceptable degree of diversity and difference.

The technique is based on a sequential anonymous questionnaire through which a series of questions to be developed (therefore, it is not a quantitative survey with closed answers, but a questionnaire with open answers) is addressed to a group of people selected for their competence and knowledge in that field. The objective of the Delphi method is, among others, to detect trends, so it takes into account both the degree of occurrence (the number of times a certain item appears in the specialists' answers) or probability, and the degree of importance of the answers or priority. In the end, the aim is to achieve a reliable consensus among a group of experts, in the case of the

Delphi method by means of sequential anonymous questionnaires. Therefore, the questionnaire is designed, as with interviews, discussion and focus groups or observation, around previously established categories of analysis, although it is accepted that in the course of two or more rounds of discussion, in order to eliminate irrelevant information and allow a certain reconsideration of answers based on what other participants have said (thus ensuring a mechanism of interaction) until an agreement is reached, others may appear, which is why grounded theory is particularly useful.

The phases of the Delphi method are as follows:

Problem formulation

The Delphi is appropriate because it helps in the resolution of very specific, not general, research problems. For example, it helps to define concepts, to define strategies, to elucidate discrepancies and to focus problems and solutions. Therefore, it is very important that before organizing the group and recruiting its participants, who should be experts in these issues so that their consensus is really enlightening, the problem for which the solution is sought is clearly and unequivocally formulated in the form of an agreement of these participants.

Selection of the participants

These are experts in the field, so the first criterion for choosing them is their degree of specialization and in-depth knowledge of the subject and of the search for solutions. As this method is in some way a group interview, interactive and focused, experience in this type of technique is especially valued for the ability to provide relevant information from the beginning, i.e., adjusted to the requirements of the research and focused on the specific issues raised. Otherwise, such redundant information or information that is poorly adjusted to the subject matter of the panel should be eliminated for subsequent rounds to facilitate consensus building, and will delay its achievement.

The participants know that they are part of a group of experts and that for this reason they have been asked to participate, although they are not given information about the identity of the other participants, they are given information about their number. This is done, unlike other consensus methods, especially face-to-face ones, to prevent some members from constraining or conditioning the opinion of others. It is not, therefore, a series of in-depth interviews on the same topic conducted consecutively with various specialists, since if that were the case we would be talking about another technique that we have already described.

As for the number of participants, obviously there must be two or more, in a variable number depending on the degree of reliability with which we want to endow the study, and bearing in mind that there may be a saturation threshold and that the responses must be managed and processed in several rounds. Okoli and Pawlowski, 2004, recommend between 10 and 18 participants, while Landeta, 1999, speaks of a figure of between 25 and 30 participants.

Number of rounds

Two to three rounds are recommended, in any case those necessary to adjust the responses into a single consensus document. the dynamic is to collect the individual responses from the first round, process and write them, eliminating redundant and off topic information, and send this preliminary report to the participants, asking them to adjust their opinions according to what has been expressed by the other participants, who, as explained, are not identified. The consensus of the group is sought, not a set of individual opinions. The operation is repeated as many times as necessary, although it is not normally necessary to go beyond the third round, in which case agreement is considered difficult to achieve.

Final presentation of results, as a report

In this report, and if the express permission of the participants is obtained, the participants can be identified in a general way, for example with a list and a small general biography of each one of them, without attributing opinions in the report to these specialists, because the objective is not to assign opinions individually but to obtain a general one from the group.

It has benefits and weaknesses, summarized in the following table:

Benefits	Weaknesses
It does not require the presence of the participants, who can be from anywhere in the world	It does not require the presence of the participants, who can be from anywhere in the world Personal interaction is more difficult
Predictive technique	Professional interest
Avoids the leadership effect	Participants, being specialists, can know who the other participants are
Flexible technique	Lack of response and abandonment especially after the first round.

Source: Own elaboration

2.6.3. Expert panels

Although the Delphi method can also be considered an expert panel, with this specific name we refer to a discussion and consensus technique in which the participants are in person and can act personally, unlike a Delphi panel, and therefore has its own characteristics.

A good definition of the expert panel technique is the following:

The main task of an expert panel is usually synthesising a variety of inputs - testimony, research reports, outputs of forecasting methods, etc. - and produce a report that provides a vision and/or recommendations for future possibilities and needs for the topics under analysis (Slocum, 2005).

This panel of experts, as is also the case with the Delphi method, seeks to reach conclusions and recommendations through consensus, and is therefore designed with this objective in mind. It is a method designed especially for the evaluation of concepts and tools.

Objectives of an expert panel

It is recommended to use this technique for:

- * Studying very specific fields that require a high level of competence.

- * To study subjects for which other tools are difficult to implement at a reasonable cost.

- * To carry out very focused evaluations.

- * To help evaluators in their conclusions on a topic that is difficult to conceptualize.

- * Clarify concepts and trends in preliminary stages of research design.

- * Provide assistance in the drafting of final conclusions related to the possible impact or influence of a research program.

Technique and structure of expert panels

The dynamics of the expert panels, as mentioned above, generally based on at least one simultaneous face-to-face meeting and moderated by a member of the research group, include:

Formulation of the problem

Generally speaking, what we have explained for the Delphi method applies. It is important, in an expert panel, to assign topics and time to the participants. They are not expected to talk for a long time about general issues, but are expected to respond to specific questions of the research problem posed to each of them, so that they help to clarify specific aspects of the problem, detect trends and explain their present and future importance, or shed light

on certain concepts, in an articulated manner among them, and with an intervention open to questions, discussion and subsequent debate.

Selection of participants

Their professional experience, their degree of specialization will be valued, taking into account which specializations are needed to solve the problems posed, their ability to work in groups and interact with their peers, and their independence. Unlike in a Delphi, in an expert panel the participants have at least one face-to-face meeting, and therefore problems such as the preeminence of some over others, submission to the opinions of others, or withdrawal should be avoided. Other participants, who generally belong to the research group that organizes and designs the panel of experts and moderates it, are a moderator (chairman or chairwoman), who sets out the rules of the game, the objectives of the meeting and governs the session, and one or more responders, who intervene before but especially after each intervention of the participants (the specialists) to focus their intervention, ask for clarification of certain issues or ask a few questions to define the terms of the subsequent debate. In addition, there will be one or more persons responsible for synthesizing in-

terventions and debates and preparing the discussion documents for subsequent sessions, whether in person or not, and for drafting the final report.

Sessions

The first and most important session opens with an intervention by the moderator, on behalf of the research group organizing the panel, explaining the objectives of the research, in general, and of the session, in particular, and the dynamics of the session, introducing the participants and recalling the tasks assigned to them. The type of research, method of data collection (in this case, with a view to the final report of the expert panel), as well as the planned number of sessions and their nature, and the planned schedule for the different phases of the expert panel as a whole, will be mentioned. The participants intervene within the allotted time and topics, introduced by a respondent, who, at the end of the intervention, helps to focus the discussion, if necessary with some questions. At the end of all the interventions, a discussion session is opened, guided by the moderator, where other possible participants of the panel of experts (e.g. other members of the research group) are allowed to ask questions. At the end of the allotted time, initial conclusions will be drawn, which may even be

shown as a public presentation, and the panel will be invited to discuss the results.

The following sessions, which may again be held in person or, for logistical and economic reasons, remotely (e.g., by e-mail), begin with a summary of the work of the previous session, the results and progress obtained, with the possible contribution of bibliography on work completed or in progress, problems encountered and to be solved, the preliminary discussion document with an indication of the operations and quality criteria used for its drafting, as well as indications as to whether or not the participants will be mentioned together with their opinions (this will have been agreed beforehand, as will the confidentiality and dissemination of the final report) and the tasks assigned for the following session, with expected results until a satisfactory agreement is reached with which to close the technique. The sessions after the first one are optional, provided that in the first one all the objectives set out in the expert panel are met. The number of subsequent sessions should not exceed a total of five.

Report

The final report, which again, if negotiated, may be sent for a final review to the panel participants prior

to public dissemination. In some research projects it takes the form of deliverables, i.e., publications of work in progress that may be of interest to the scientific community, especially because of their methodological nature.

Although an expert panel can be conducted, in whole or in part, virtually, it is recommended that face-to-face meetings predominate. In this way, and in the manner of a workshop, the group of experts and guests invited to the session is kept relatively small in order to promote maximum interaction. Therefore, the number of experts will be small, around five, so that at least the first face-to-face session can be developed in a compressed format, half a day for example. If more experts are needed, they can be segmented by fields or topics of interest and more than one panel of experts can be organized. A panel of experts, unlike a Delphi, does not include all the main specialists of the research in progress, but only those who we consider can provide sufficient information to meet our objectives. The selection and availability of participants is crucial to the success of an expert panel. However, it is desirable that the face-to-face sessions of the expert panel lay the groundwork for a subsequent exchange of information, in whatever form is deemed appropriate, with other specialists

on an ongoing basis. Thus, the final report of an expert panel serves as a letter of introduction to initiate further discussion in the scientific community.

The benefits and weaknesses of this technique are summarized in this table:

Benefits	Weaknesses
Significant time reduction .	Tends to eliminate minority viewpoint
Cost-effectiveness	The viewpoint of the "dominant" expert may have excessive influence on the panel.
Credibility of conclusions	Experts may have a tendency to go beyond their field of expertise (digression).
It is flexible and easily adaptable to a variety of evaluation needs.	It is a method in any case complementary to other techniques, especially in incipient research.

Source: Own elaboration

2.6.4. Nominal Group Technique

The third technique we will explain is the Nominal Group Technique

(NGT), defined by Jon Landeta et al. as follows

The NGT is a structured method for capturing and aggregating opinions emerging from a group of experts who physically coincide in terms of place and time [...] a particular case of Focus Group (Landeta et al., 2011).

Thus defined, an NGT would be the same as a panel of experts. The difference is that experts external to the research group are not normally sought, but rather it is a technique whose participants are the group members themselves.

Such an approach is better understood if we specify what the objectives of this technique are:

* To determine and specify research strategies procedures to follow, unify concepts, identify trends. Therefore, this technique is especially valuable for a research group, once its objectives, problem and research questions have been defined, to propose a NGT in the first phase of the research project in order to advance in its execution.

* Identify priorities or choose alternatives.

* Decide when handling ideas and concepts that may be ambiguous or controversial and unify criteria.

* Generate new ideas and ensure that all members participate free

from the influences - not the interaction, which is different - of other group members or participants.

The dynamics and structure of the NGT are as follows:

It is carried out in a similar way to the other techniques examined. If it is a NGT to be carried out in the early stages of execution of a research project, whose participants are its members, the problem and research questions will be previously defined, so the NGT will be indicated to solve specific problems, since its format is limited. In any case, as many NGTs can be organized as necessary to solve the different aspects of research that are defined.

Selection of participants

When it comes to the example we are proposing, a project to be carried out by a research group, its members are the natural participants, so to speak, of an NGT. One of them will take on the role of facilitator, i.e. someone who will organize the session and lead it, moderate the discussion and synthesize the results, and even formulate a final proposal.

An NGT session includes a first part in which participants are asked to write down their ideas and views for further discussion, so a place is needed where they can write this initial document in peace and quiet. A time and instructions are assigned to

carry out this first phase. It is explained how this document will be approached, the objective of which is to proceed to a brainstorming session.

This is followed by the face-to-face discussion phase. The ideas are presented individually, and once the round is completed, the pros and cons are discussed, and the discussion is focused by discarding redundant or off topic information. It is proposed to consider alternatives formulated as precisely as possible, until an agreement is reached, unanimous or as majority as possible, because such agreement must be respected and valued by the group as a whole. As a last resort, a vote could be considered. The items that appear can be ranked and priorities for action can be assigned.

It is possible to proceed, especially when symptoms of fatigue or saturation appear, to proceed to two or more rounds, as in the Delphi method or expert panels. A final discussion is held for the sole purpose of refining concepts.

A final report is produced, in this case for internal consumption by the group, which establishes the lines of action, delimits competencies, decides on techniques and defines concepts.

The benefits and weaknesses of this technique are summarized in this table:

Benefits	Weaknesses
Encourages peer-to-peer participation, provides a structured framework for decision making	Forces everyone to have a voice and an informed opinion
Identifies problems and opportunities, strategic issues, proposes solutions.	Keeping all ideas and opinions, wherever they come from, equally visible is not always easy.
Helps collective decision-making through discussion, negotiation and synthesis.	Voting oversimplifies decision-making and limits the further development and adoption of these ideas (reduced to a list), and can minimize discussion.
Focused on specific and relevant issues.	Necessarily focuses on a single issue and a single objective. More complex designs need more NGT.

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Social Network Analysis

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Social Network Analysis

1.SNA: A definition

Social Network Analysis (SNA) is a technique, based on network theory and graph theory, which aims to explain and visualize the relationships between the different nodes, personal or otherwise, of a given network. Graph theory offers us a representation of a network as a model, reducing it to nodes or actors and their relationships. The rise of digital social networks has boosted the use of this research technique, although it is not only designed to analyze Twitter or Facebook, for example, but all kinds of social relationships. In other words, and following one of the leading current researchers in social network analysis, Elisa Bellotti, this technique focuses on observing the relationships of actors in contextualized environments (Bellotti, 2015: 15). Networks, in turn, are defined as a way of conceiving social systems that concentrates our attention on the relationships between different entities

(people or others, for example cities in a news distribution network, or organizations) that make up the system, which are called actors or, and this is the first central concept that we must handle in network analysis, nodes (Borgatti, Everett and Johnson, 2013: 2).

2. Preliminary concepts related to SNA

Before explaining what the elements of a network are, it is convenient to relate the explanation on social network analysis by resorting to four concepts (Bellotti, 2015: 5):

1) Network science is the scientific approach to the study of the dependencies and associations that occur within a network.

2) Network analysis is the methodological tool through which network science is investigated by applying graph theory.

3) Social networks are the empirical phenomenon that presents a relationship between actors through patterns of interconnected relationships. Describing, visualizing and explaining these patterns is the main objective of network science and network analysis.

4) Social network analysis is the application of network analysis to the study of these patterns within a social network.

3. Goals of SNA

The objectives of a research that can be satisfied through social network analysis can be schematized in the following table:

- * Determination of the actors or nodes present in a given network.
- * Determination of the relationships between actors or nodes. Nodes and links.
- * Explanation of the channels and modes of dissemination through which this relationship between nodes or actors is produced, or, in our case, how information circulates and is shared in a given network.
- * Explanation of network processes within social movements and collective actions, in our case communicative.
- * Construction of meaning.

Source: Own elaboration.

4. Data collection in SNA

The collection of data, and the very nature of the data from a network, presents some particularities to be taken into account with respect to those that we handle in other social research techniques. SNA is not a completely quantitative technique and benefits rather from a mixed methods approach, thus combining quantitative and qualitative methods, especially because from the postulates of social science it also handles concepts and techniques of graph theory (Crossley, 2010; Bellotti, 2010, Edwards and Crossley 2009, Pavan, 2016).

5. Elements of SNA

5.1. Introduction

The three main concepts that we will handle in social network analysis are: interaction and flows (e.g., of information), links or relationships (also called edges), and the networks themselves.

Nodes

The first of these elements is nodes. It is the basic element of network analysis, and represents the unit of analysis. Therefore, the first operation is to define what we mean by node and what its characteristics are, and then to make a census of nodes and proceed to identify and record them, as

we would do with the units of analysis, for example, in content analysis.

Links

The second central concept is the relationship between nodes, which is variously called ties (links). In the following, we will focus our attention either on the nodes (resulting in what is called an egonet, i.e. a network defined in terms of a node) or on the characteristics of the network as a whole. As Crossley et al. (2016: 8) explain, when we analyze a complete network we have to identify a population or universe of relevant nodes to then investigate the existence or not of equally relevant ties or relationships between them.

Let us take a couple of examples: an epistolary network, let us say the one that thinkers close to the French Revolution maintained among themselves. In this case the nodes are the people who maintained that relationship through letters, say Voltaire, Rousseau and other philosophers. Our first task is to define these people and make a census of them, then to know the number of letters they sent to each other, and whether or not they got a reply, or even if they forwarded these letters to other members of the network. And here we have the relationships. Translated to today's world, the kind of operations that take place in digital social networks such as Facebook or Twitter. Another example,

where the nodes are not people but places. The aim of our research is to find out how news flowed in 20th century Europe, so the nodes are cities, or even newspapers, where such information was centralized, received, rewritten or forwarded to other places. The nodes are those cities and those media. The communicative operations that related them to each other, the links, vertices or relations. Thus, the complete network is composed of the number of nodes plus the possible number of relations, which can be presented in the form of a table. Taking one of the examples mentioned above. To simplify it, we propose 'only a few nodes (three correspondents, say Voltaire, Rousseau and Diderot):

	Voltaire	Diderot	Rousseau
Voltaire	0	0	1
Diderot	1	0	1
Rousseau	1	1	0

This is what is called an adjacency matrix, and is the starting point of the whole analysis. The values 0 and 1 mean that there is a relationship or not, i.e. neither of them writes letters to himself (therefore the value is 0), and we find that Voltaire corresponded with Rousseau, but there is no letter from him to Diderot, while Diderot did write letters to Voltaire (value 1), therefore there is a relationship in only one direction, while

Rousseau's epistolary relationship with Voltaire and with Diderot was in both directions (value=1).

5.2. Concepts related to network analysis

Three other concepts are considered below, always within the analysis of the network as a whole:

- 1) Density.
- 2) Transitivity.
- 3) Reciprocity.

Density

It refers to the number of links or relations, or vertices, present in a network, and is expressed by a ratio between the number of possible relations and the number of relations of which we have evidence. In other words, it is the result of the number of existing relationships divided by the number of possible relationships in a given network. The density values of a network range from 0, when there are no relationships, to 1, when all possible vertices are present. For example, if there are 5 verified relationships out of 6 possible ones (in the proposed example the letters that nobody sends to himself are not counted as possible relationships), the result is $5/6=0.83$. Therefore, the density value of the proposed network is that: 0.83. As it is a number close to one, we define that network as high density.

Transitivity

This concept states that two nodes are more likely to be connected to each other if each of them, in turn, is connected to a third common node. If Voltaire writes to Rousseau and Diderot also corresponds with Rousseau, there is a greater chance that Voltaire and Diderot will correspond in turn.

Reciprocity

When between two nodes there are relations in both directions. Voltaire sends letters to Rousseau and Rousseau answers him, so there is reciprocity. On the other hand, Voltaire does not respond to Diderot's letters. There is high reciprocity when there are symmetrical relationships between nodes. When there is low reciprocity it means that there is an imbalance in the exchange of information between nodes and the result suggests that we are dealing with a network and a hierarchical type of relationships.

Let us now consider the nodal level of analysis, i.e., we focus on a particular node and its relationships with other nodes in the network, not so much on the network as a whole.

5.3. Types of centrality

Nodes exhibit a number of properties depending on their connection patterns. A node can be more or less central in a network. Four types of centrality are considered in node analysis:

- 1) Centrality degree.
- 2) Betweenness.
- 3) Eigenvector.
- 4) Closeness.

Centrality degree

It is defined as the number of direct connections that a node receives from other nodes.

Betweenness

Betweenness counts the number of times a node acts as a bridge or intermediary on the shortest possible path between two other nodes. A node with a high betweenness is supposed to show a noticeable influence on the transfer of information in a network, assuming that information always follows the shortest path. In other words, it measures the potential of a node to control information flows in a network.

Eigenvector

This type of centrality measures the status of a node, determined both by the number of direct connections it receives and how well connected its contacts are in turn. This type of cen-

trality means that each node's centrality is proportional to the sums of the centralities of the nodes adjacent to it, and in a way it can also be considered as a measure of popularity, since a node with a high degree of eigenvector is connected to well-connected nodes as well.

Closeness

It is the sum of geodesic distances from a node to the rest of the nodes in a network, or the length of the shortest path between nodes. In other words: how many relationships a node must pass through before reaching another node. In informative terms: how long it takes for the flow of, for example, news to reach its destination. Nodes with low closeness results are well positioned to promptly obtain new information.

6. Designing a SNA study

The operations to follow before proceeding with a network analysis are:

- 1) Definition of the universe or census of nodes. For example, the participants in a discussion on Twitter in a given period of time, let's say from the time a report on poverty is published until today.

- 2) Data collection. Continuing with the example: the tweets of those nodes, their hashtags, day and time of emission, etc.

The relationships between these nodes (number of retweets, replies, etc.) must also be collected. An adjacency table is created.

3) Firstly, a quantitative approach is sought, usually using software: presence of patterns and regularities. And then, a qualitative approach is applied, with more nuances, which seeks to explain the type of network and relationships and the reason for them. For this purpose, complementary techniques such as content analysis or qualitative methods are usually used. Finally, software is also used to obtain the graphs that represent, for example, the different centralities. For example, Ucinet or NodeXL and NetDraw can be combined. These graphs can be of various types, for example radial or reticular (generally, when the network as a whole is investigated) or hierarchical (when we act at the node or egonetwork level and intend to represent the relationships of a particular node with the rest).

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Scoping reviews and CAQDAS software as a methodological approach for interviews

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Scoping reviews and CAQDAS software as a methodological approach for interviews

1. Introduction

The interview is a highly effective tool for the development of qualitative research and is widely used in social science studies. It is a technique characterised by the application of a conversation between the sender (researcher) and the receiver (interviewee) with the aim of collecting data for the development of academic studies of all kinds. This conversation between the researcher and the interviewees can be more or less directed, depending on the type of interview. It is important to differentiate the research interview from other types of interviews, such as journalistic or medical interviews. Although they share the same procedures, the purpose of each differs greatly, and they should not be confused. The scientific interview aims to obtain data to validate hypotheses and/or expand knowledge about what is being inves-

tigated, while the journalistic interview aims to construct a dialogue with informative value and the medical interview aims to collect relevant data about patients, individually or collectively.

In this sense, three types of interviews can be identified that can be applied in the course of an investigation:

- (1) structured interviews,
- (2) semi-structured interviews and
- (3) unstructured interviews.

Each of them has its own intrinsic characteristics and therefore, using one or the other will condition both the development and the outcome of the research (Díaz-Bravo et al. 2013). Given this circumstance, it is essential to know the advantages and disadvantages of each of them properly and apply the most appropriate one according to the needs of the study to be carried out.

The following is a brief explanation of the interviews that a researcher can use for their studies:

Structured interview: this is a rigid type of interview that allows very systematised results to be obtained. It is characterised by having, on the one hand, questions fixed in advance with a strategic order and, on the other hand, a series of closed answers. The interviewees under this formula must select, from the list of answers, the ones they consider most pertinent. It is a type of interview with a high degree of objectivity; however, due to its rigidity, it does not allow for results rich in interpretations and/or in-depth assessments of the interviewees.

Semi-structured interview: this is a type of interview in which the interviewees answer freely (without being conditioned to specific answers) to questions that are generally open-ended. This method is characterised by being quite flexible and dynamic, with more open-ended results since, although the questions are fixed, interviewees can answer, interact with the researcher, and even make cross-cutting assessments of the questions asked. All the information obtained can be analysed and included as results for the research.

Unstructured interview: it is characterised by a great wealth of assessments and evaluations due to its flexibility and options for interpretation,

as the questions are open-ended, they are formulated according to the development of the content of the interview itself and therefore the interviewees are not directed and can respond freely. Occasionally, some of the answers may be far from the object of study. In this circumstance, the researcher must code all the answers and eliminate those statements that do not add value to the research.

In short, the interview is a very flexible tool, as it is a method that adapts to the sample (the interviewees) from different perspectives and aspects, such as their knowledge of the subject, their context, their beliefs, etc. This gives it great value as it helps the researcher to collect very detailed and unique data on a wide range of topics and scientific disciplines.

Interviews in social science research can gather information from different sources, since depending on who we interview, we will obtain different data. We can differentiate between interviews

(1) with specialists, people especially related to the area of knowledge we want to address;

(2) interviews with users and/or recipients involved in the area of knowledge we are investigating; and

(3) with the general public. In this chapter we will focus on interviews that aim to gather information from specialists in a thematic area.

However, there are three essential issues surrounding interviews that researchers should ask themselves as they are crucial to the success of the research:

- How to identify the interviewees who will be part of the study sample?
- How to decide what volume of interviews will be meaningful?
- How to analyse the most relevant data provided by respondents' answers?

This chapter aims to offer a practical guide to help researchers answer these three questions. In order to do so, firstly, it proposes the understanding and application of the Scoping Review as a method for identifying possible interviewees, and secondly, the knowledge and use of CAQDAS programmes (more specifically NVivo) for the coding and qualitative analysis of the data resulting from the interviewees' answers. This chapter also includes a practical example applied to semi-structured interviews.

2. Scoping Review as a methodology for the identification of experts

A Scoping Review, also called an exploratory systematic review, is a kind of knowledge synthesis whose main objective is the analysis of the academic literature produced in a scientific area or discipline in order to identify its specific characteristics.

It is a review methodology that helps researchers to determine, through a systematic type of evidence synthesis, the state of the art of a specific research topic, discipline or even field of knowledge.

Therefore, this is an ideal methodology for academic work, and more specifically for constructing solvent theoretical frameworks and, in short, for supporting any research work (Codina and Lopezosa, 2021).

However, the use we can make of the scoping review is not limited to this objective. In the proposal presented here, the application of an exploratory systematic review is used, on the one hand, to help identify the main experts on a specific field/field of knowledge to incorporate them as a sample to be interviewed and, on the other hand, to help the researcher to support and give greater scientific rigour to the selection of their sample.

There are different frameworks for the development of scoping reviews. On this occasion, the main SALSA framework (Grant and Booth, 2009; Booth et al., 2012) will be explained as a procedure to guide and evaluate the systematic review that will eventually lead the researcher to locate the main researchers on a specific subject to incorporate them into their interview study.

The SALSA Framework owes its name to the acronyms that characterise its four critical phases:

Search: The search phase is resolved through the definition of the project to be carried out, the design of the search equations, their application in mainly academic databases and the selection of references taking into account exclusion and inclusion criteria (Codina, 2020a).

Appraisal: This phase of evaluation is carried out through a re-review of the inclusion and exclusion criteria in the set of each reference, which may include the subject matter, the date of publication, the object of study and ultimately the verification of the quality of the article identified (Codina, 2020b).

Synthesis: In this phase, structured summaries are made based on the main parameters of each research study: subject of study, objectives, most significant results, etc. Diagrams or conceptual maps are eventually included (Codina, 2020c).

Analysis: systematic extraction of valuable data and information on the aspects to be studied (Codina, 2020c).

In short, the SALSA application makes it possible to obtain a battery of documents, mainly academic articles and book chapters by leading researchers on the area of knowledge studied. These documents usually have specific information about the authors, generally their e-mail address and possibly their address and telephone number. These elements can be taken as a starting point to

contact them and propose their participation as interviewees in our research study.

3. CAQDAS software as a tool for qualitative coding and analysis

Advances in the field of Information and Communication Technologies have led to the rise of computer-assisted qualitative analysis software (CAQDAS). These are tools that are capable of electronically coding data, helping researchers to make their studies more rigorous and effective.

One of the most widely used CAQDAS programs is NVivo. It is a software developed by QSR International for qualitative data analysis, content analysis and narrative analysis. Not only is it a tool that helps to organise all the documentation that makes up our research, but it also allows us to systematise, process and analyse it, giving it shape and meaning (Dias et al. 2016).

NVivo provides a workspace for researchers to store, manage, query and analyse unstructured data, be it text, image, audio, video and other types of data such as tweets.

This allows us to work with a large amount of data from a single dashboard, and all this information can be easily and automatically converted

into presentations, reports, and/or diagrams (Leech and Onwuegbuzie, 2011).

NVivo stands out because it improves the time and quality of the results of the research that we are developing with qualitative methods. It has services that automate the processes of analysis of the data obtained, it allows us to discover patterns, themes and trends, therefore, it helps us to resolve the conclusions of our studies in a solvent and effective way (Walsh 2003), it is even useful for analysing interview data (Gómez, 2015; Lopezosa et al 2020a; 2021a).

Ultimately, NVivo allows users to complete multiple qualitative analysis functions from within its platform (NVivo, 2019a; 2019 b), including sorting and filtering raw data (Leech, Y Onwuegbuzie, 2011), discovering and building relationships between data (Sabariego, 2018; Lopezosa, 2020b), assigning and defining themes and categories for data (Wiltshier, 2011), and visualising the results of data analysis (AlYahmady Y Saleh, 2013; Zamawe, 2015), among others.

Methodological proposal for the development of semi-structured interviews with scoping review and Nvivo: case study

Let's imagine that we have to carry out a study on new journalistic formats and we need to identify and interview experts in this area to know their opinion on the future of journalism and upcoming trends, but we don't know who they are or how to get in touch with them.

We propose to conduct a semi-structured interview, with few questions, that is easy to answer and not too time-consuming for the interviewees. We propose a semi-structured model because we want the experts to be free to answer the same questions. In this way, the comparison and/or confrontation of their comments will be more effective than in open interviews and more nuanced than in structured interviews.

Given this circumstance, the first step will be to analyse the scientific production on these formats and to do so we will develop a scoping review (Codina and Lopezosa, 2021) applying the SALSA Framework (Hart, 2008; Grant and Booth, 2009; Booth et al. 2012).

Application of the SALSA framework	
Phase	Criteria
Search	Database: Scopus and Web of Science
	Search equations: - "Structured journalism" OR "immersive journalism" OR "visual journalism" OR "virtual reality" OR "augmented reality" OR "augmented journalism". - ("Virtual reality" OR "augmented reality") AND (journalism OR newspaper* OR "digital news media") - Interactivity AND (journalism OR newspaper* OR "digital news media") - ("360degree video" OR "360 video" OR "360 video") AND (journalism OR newspaper* OR digital news media) - (newsgame* OR news-game* OR docugame* OR docu-game*) AND (journalism OR newspaper* OR "digital news media")
	Years of publication: 2015-2020
Appraisal	Initial number of documents: 275
	Final number (N) after applying inclusion/exclusion criteria: 67
	Inclusion/exclusion criteria: elimination of false positives, articles with IMRaD or similar structure (explicit method and presentation of results)
Synthesis	Narrative synthesis and data tables from the analyses performed.
Analysis	Components: - Object of study - Aims and objectives - Questions/ Problems/ Hypotheses - Methodology

Table I. Adapted from SALSA framework (Grant and Booth, 2009; Booth et al. 2012)

The table shows that the search for documents was carried out in the Web of Science and Scopus databases. For these searches, equations related to different formats linked to the media were applied. Specifically, the results obtained from documents published between 2015 and 2020 were collected. The final result of the sample of documents was 275. However, from this sample we had to subtract those

documents that did not meet the inclusion and exclusion criteria. Once the main documents in our sample had been identified, 67 final documents were located. The scoping review concluded with an analysis and/or summary of each document. In the case at hand, which is to identify potential experts for our semi-structured interview study, the next step is to open each of the documents (the 67 final documents) and identify

each author and their personal information. Usually we can find the email address of the authors along with their first and last name and their affiliation. Therefore, we would have not only the experts likely to be interviewed, but also their e-mail address, which would help us to contact them. With this selection, we have a universe of interviewees of approximately one hundred experts. The formulation of the interview does not require responses from all of them. In other words, we imagine an interview in which the number of responses does not excessively condition the result. In other words, our research does not depend on a certain statistical value of the responses of the interviews we are going to carry out to validate or refute the hypotheses we have formulated or to answer the research questions.

Let us imagine that the questions we want the experts to answer for our study are the following two:

- How would you define, or what does it mean to you, the concept of "journalistic innovation"?
- What do you consider to be the most important or significant new journalistic format (or formats) for journalism today or in the future?

Interviews can be conducted through different channels: face-to-face, by telephone or by email, obtaining different results with each of them. In our example, we chose email as the

channel, due to its low cost and ease of execution, despite its disadvantages, such as a lower response rate (Díaz de Rada, 2012).

One option is to incorporate the questions in an email message for them to answer. There is no standard or optimal model for sending questions to experts, however there are certain requirements that help to increase the response rate.

For example, the email needs to be well written, explain who we are, how we found them, what the purpose of the research is, the reason why the expert is considered a suitable sample for our research, and finally offer some kind of consideration such as sending them the research once it is completed or including their name in the acknowledgements. As researchers, we must comply with the codes of ethics and transparency that condition our work and to which our universities adhere (European Commission, 2010; 2013; 2018; CIREP, 2020).

A proposal for an email is attached below, following the example in this section:

Subject:

Survey about journalism innovation. Research project of the Pompeu Fabra University
(...)

Dear prof. xxxxxxxxxxxxxxxx,

My name is xxxxxxxxxxxxxx and I am a researcher at the DigiDoc Group (Digital Research Group on Documentation and

Interactive Communication) of the Pompeu Fabra University.

I contact you because we are conducting research on journalistic innovation, in its new formats.

To this end, we are realizing short interviews with experts in this field, as is with your case, and that is why we are sending you this email.

The interview consists of these two questions, for which your answer may consist of one or two lines of text:

1. How would you define, or what does it mean to you, the concept of "journalistic innovation"?

2. What do you consider to be the most important or significant new journalistic format (or formats) for current or future journalism?

To the experts who participate by answering at least one of the questions, once the research is finished, we will send you a copy of it in PDF format.

In addition, all the experts who participate in this study will appear in the annex (name and institutional affiliation).

To answer the survey, you can copy the questions and answer in a separate document or in the body of the email, whatever you prefer.

For any questions or clarifications about this Research please contact me without hesitation.

Kindly receive a cordial greeting, thank you very much in advance for your collaboration.

(...)

Once we have received the experts' responses, the next step is to analyse the content of the interviews, using the qualitative analysis tool NVivo.

The process for coding the interviews and the explanation of the two ways of obtaining interview data with this software, i.e. from the tag cloud service and from the tree system resource, is documented below.

Let's assume that we have managed to interview 19 professionals about new journalistic formats as a result of our scoping review. The first thing we will have to do is to dump all the interviews into NVivo, either in Word, notepad or pdf format. To do this, we will go to the Nvivo website, register (paid version, trial version) and create a project from scratch.

Image 1. Interface of the main page of the NVivo tool once registered. To access NVivo, click on the following link: <https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home>

Go to the tab "Create a new project". A new window will open, and we will

have to fill in the data for the new project.

Image 2. Interface of the Nvivo tool in the process of registering a new project. The image shows an example of the project title and description. The language of the text content is also selected, so that the tool identifies it in its original language. In this case, let us imagine that the interviews obtained are in Spanish.

Image 3. Nvivo tool interface. In the import tab we will have to upload the interviews so that they are registered in our project.

Image 4. Nvivo tool interface. This image shows the selection of the 19 interviews in pdf format that will be imported into our project.

Image 5. List of the interviews already incorporated for use within the NVivo tool.

Image 6. When we select one of the interviews uploaded to the tool, the transcript of the selected interview is shown on the right side.

Once we had dumped all the interview texts into the Nvivo software,

we went on to identify the most interesting statements and to classify them by codes.

Figure 7. Steps to thematically code the interviews. We select the interview we want to code and create a new code.

The process of selection and thematic categorisation (creation of a new code) is carried out on all the interviews. In this way we can group all the statements of the interviewed experts into different themes.

Image 8. Once the code has been created, we give it properties. This is useful to know exactly what the created code represents. This is mainly to avoid losing the sense of thematic categorisation if we work with many similar codes.

Image 9. This shows the selection of one of the most interesting statements made by interviewee 1 and its subsequent thematic classification. In this case the code is "new journalistic formats". When we go to the code "new journalistic formats" the underlined statement will appear, i.e. from "Sincerely is such a list of new formats (...)" to "(...) of interactive audiovisual in and for its future."

From our analysis of the interviews we obtain in this case two codes (but there could have been more if we had wanted to be more specific) that group the statements of the 19 interviewees. In our example these codes have been divided into:

- Journalistic innovation
- Journalistic formats

In the following, we show how to work with the codes and identify the results. To do so, we will take as a reference the code "new journalistic formats". The following image shows the two codes, and specifically the statements selected in this case for "new journalistic formats". Once we deploy this code, all the statements of the interviewees that we previously coded are located.

Figure 10. The content that has been included from each of the interviews in the code "journalistic formats" is shown. Each coded reference box contains statements from each interview.

Image 12. The count of words and their percentage of repetition based on the code "new journalistic formats" is shown.

The image shows that terms such as journalism, innovation and journalistic, among others, are constantly reiterated in the interviewees' statements. We omitted the empty words ("which", "how", "you" etc.) as they do not add significant value to the interviewees' answers. We then selected the "word cloud" resource.

The word count tool based on our codes is shown. In this case, the word count process on "new journalistic formats" is shown.

The image shows the process by which we can identify which words are the most used by the interviewees based on a specific code. The more often a word is repeated, the more likely it is to have an important value (see picture 12).

Image 13. The interface where the word cloud of the code "new journalistic formats" is shown.

Image 14. The word cloud of the code "new journalistic formats" is shown.

This tag cloud reflects the most recurrent terms in the interviewees' statements. The word cloud is formed by frequency of repetition of terms. This tool helps us to identify the most salient themes in the interviewees' statements, thus helping us to do deeper coding on the content of the interviews, or even to identify patterns of responses.

Another of Nvivo's outstanding tools is the "Word Tree". The word tree helps us to identify statements from interviewees by considering a specific term. Let's imagine that we are still working with the code "new journalistic formats" and we want to know what the experts said about "formats". In that case, we have the following possibility shown below.

The first thing to do is to go back to the word count resource (see images 11 and 12), select "unsaved query" and enter the term "formats" in the box.

Image 15. The statements coded as "new journalistic formats" are shown, more specifically, those that include the word formats.

Once this has been done, we will be shown all the statements that were coded as "new journalistic formats" and that have a sentence that includes the word formats. Once this is done, we will have to select the "Word tree" tab.

Image 16. The interface showing the word tree of the code word "new journalistic formats" and more specifically of all those statements that include the term "formats".

The interface showing the resulting word tree is shown.

Conclusions

In this chapter we have explored scoping reviews and the qualitative research software NVivo as a methodological approach to interview development. It is a systematic process divided into two blocks: (1) choice of interviewees (2) content analysis of the interviews that will facilitate the work of the researchers.

We consider that these two tools can be very useful for researchers, not only as instruments to identify experts and analyse their statements, but also to have a greater methodological support in the process of developing the interview study.

Moreover, this methodological proposal presented here has already been tested in some research studies with very interesting results (Lopezosa et. al 2021b) and stands out for being scalable and applicable to any type of study in which interview-based data are collected.

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Quantitative methods in communication research

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Quantitative methods in communication research

1. Definition

The quantitative research method is one of the two great families into which scientific techniques are divided. The other is the qualitative methodology.

The quantitative methodology is aimed at collecting facts and data in an objective, measurable and numerical way, so that they can be tabulated and compared with other similar data. These objectifiable facts are measured and collected from the outside, so for other types of issues, such as the interpretation of more complex social phenomena that may have to do with opinions, attitudes, values or ideologies, qualitative methods are, in principle, more suitable. In any case, and that we are interested in emphasizing, these are not incompatible procedures. Nothing prevents, for example, that to solve certain research questions also on opinions and attitudes we go to a quantitative survey and a series of qualitative interviews. The triangulation of methods,

or the use of techniques belonging to both the quantitative and qualitative style, can yield, in many investigations, very valuable results.

The quantitative method is, in origin, positivist: it looks for the data, and describes it in relation to other data so that it can determine patterns and formulate generalizations. In reality, the qualitative methodology can seek to obtain similar results, although in other ways. The quantitative method insists on relying on empirical evidence at all times, so it opts for techniques of massive application, to large population groups or universes or, when it comes to content analysis, to highly populated corpora. The quantitative method aims to be measurable and replicable.

We will explain three quantitative research methods: the survey, the experiment and the content analysis, although this can be of both types, quantitative and qualitative.

2.Experiments

It is useful to design an experiment in certain reception and audience studies, to see how the audience responds to certain stimuli, and to validate certain types of hypotheses, especially relational ones. Experiments aim to reproduce in the laboratory some of the conditions of the natural or, in our case, social world, with the advantage that by proceeding in this way it is possible to isolate and better control the variables and their mutual relationship, while in the natural or social world there is another series of conditioning factors that cannot always be observed or considered.

The control of variables is another of the great advantages of experiments. On the other hand, when the aim is precisely to take the context into account, another type of method is recommended, for example qualitative observation.

Although experiments are normally designed and carried out in a laboratory, where the variables can be isolated and controlled, there are also experiments that are carried out in the field, and aim to record, or at least observe, the possible influence of other circumstances that may influence the result. The difference between the two, therefore, is the control of conditions.

Other advantages of designing an experiment are the identification of the

causes of certain phenomena, in our case social and communicative, the evaluation of the effects of certain variables, and the precision with which the mechanisms in which the variables operate with each other can be described. John Brewer and Albert Hunter put it this way:

Experimentation, more than other styles of research, promotes clear causal inferences. Its strategy is to manipulate exposure to an hypothesized cause, while controlling for the contaminating influence of other possible causes by the use of control groups and by the random assignment of subjects to control an experimental situation (Brewer and Hunter, 1989).

There are basically three types of experiments in terms of design:

- 1) A person or group, a single variable.
- 2) Two groups, a pair of variables (dependent / independent).
- 3) Factorial: More than one group and more than one pair of variables. They are, it goes without saying, the most complex and time consuming but the ones that yield the most elaborate results.

The experiments can be projected or ex-post-facto. While the first

seeks to determine the cause-effect relationship between variables, the second type of experiment seeks to reconstruct a certain social or communicative situation, for example, to reconstruct the reactions to viewing certain types of scenes in a television series.

The experiments can be carried out simultaneously for all groups or longitudinally, over time so that we can also record the variations that may occur through the application of new conditions, for example the experience acquired from the user and the development

When designing an experiment there are three basic elements to take into account:

- 1) A group of people who undergo a stimulus to measure their responses.
- 2) A stimulus, usually the independent variable or cause of the dependent variable.
- 3) A transformation that can be registered and, where appropriate, measured, which is the independent variable or, as it were, the effect.

Normally, when an experiment is designed there are at least two types of groups that are subjected to it:

- 1) The control group and
- 2) The experimental group itself.

The control group is the one whose reactions are known, while the experimental group is the one in which we intend to measure the reactions.

Both groups are equal, the difference is the stimulus to which they are subjected.

The techniques that can be used to present and measure the stimulus are diverse. These include providing participants with a list of adjectives to choose from to rate the response to the stimulus, or to grade it.

Another technique is word association and concept classification. On other occasions, the participants are asked personal constructions or even narrations (storytelling), to narrate their experiences once the stimulus has been presented to them. Another method is to invite participants to express their reactions out loud, or to play a role, or to fill out questionnaires. Finally, another technique is the simulation of certain social situations.

There are four methods to determine the cause:

- 1) The matching method.
- 2) The difference method.
- 3) The residual method.

4) The concomitance method (increase or decrease).

The experiments can be subjected to spontaneous conditions, and are called free experiments, or be subject to special conditions, and stimuli specially designed for the experiment. For example, in an experiment with Eye Tracker, a computer program that detects and records eye movement on a computer screen, a group of people with certain characteristics can be asked to read a real online communication medium or design a news item that gathers those variables that we want to consider.

The validity of the experiments is achieved by basically applying three techniques:

1) The parallel test (alternative-form method): The same result is sought using different methods on two occasions.

2) Internal consistency (split-half method): dividing the group into two halves to see if both offer similar results, and applying a correlation coefficient.

3) The stability test (test-retest method): The same experiment is repeated at various times in the same group to verify that it produces the same results.

One of the main problems of the experiments is representativeness.

In fact, this is a problem common to many techniques: how a sample can reliably represent a certain universe, sometimes much larger, and how to combat randomness. A possible solution is to define well the profiles of participants from strata of the universe, in such a way that invariability and homogeneity are considered, which leads to looking for pairs of participants: men / women, young people / elderly people, etc. In addition, it is necessary to take into account both the possible disturbances and the possible appearance of new variables, if they are needed.

Other problems have to do with the biography itself and the personal singularities of the participants, which are difficult for them to respond absolutely to the defined type; the maturation and experience that the participants accumulate, which is detrimental to naturalness; the different selection and composition of the groups; and abandonment from the first session due to lack of motivation or interest, so it is advisable not to carry out many sessions with the same group.

Like any other technique, the experiments provide benefits but show some weaknesses, criteria

that must also be taken into account when deciding on this technique:

Benefits	Weaknesses
Adequate to explain the causes	Not realistic.
Variable control	Not all variables can be controlled
Isolation of variables and chance.	Isolation of variables
Replicable and predictable	It is not always easy to extrapolate the results.

Source: Own elaboration

3. Content analysis

Content analysis is one of the social science research techniques with the longest tradition and one of the most widely used. It is, in fact, a variety of techniques that focus on various aspects of communicative products or "messages".

It is one of the most widely used techniques in the social sciences throughout the 20th century, gradually increased by computer advances in data processing.

The fundamental authors are Bernard Berelson (*Content Analysis in Communication Research*, 1952) and Klaus Krippendorff (*Methodology of Content Analysis*, 1980). The classic definition by Bernard Berelson (1912-

1979) in *Content Analysis in Communication Research* (1952) is the following:

A research technique for the objective, systematic and quantitative description of the manifest content of communication.

The latent content of communicative texts is not analyzed by quantitative content analysis. This consideration refers to the interpretative nature of content analysis, which should not go beyond the manifest.

Content analysis is a technique that seeks to identify specific characteristics within a text or discourse, which is used to obtain valid and reproducible inferences from the data. It is a technique that can be used, within a research design, for exploratory as well as confirmatory or explanatory purposes. It seeks, like other quantitative techniques, to determine what are the recurrent structures and patterns in a given universe.

The characteristics of content analysis are:

- It is a technique of inquiry, search and investigation.
- It is objective: it needs to be clearly designed, using quantifiable data and verifiable techniques.
- It is systematic: it must take into account all the data in the text, systematize them and always code them in the same way.

- It is quantitative: the data are expressed numerically.
- It generally refers to the manifest content, i.e. the content expressed at the textual surface level, not the latent content.

The objective of content analysis is to quantify patterns and frequencies by counting heterogeneous materials (books, newspapers, poems, news items) and heterogeneous contents (themes, words, images, etc.). It is a technique suitable for extensive research, with large volumes of text. Technological advances allow research to be extensive and applied to large volumes of texts.

Klaus Krippendorff (1980), one of the key authors in understanding this method, establishes six basic questions to address this technique:

1. What data will be analyzed?
2. How are they to be defined?
3. What is the population from which these data will be extracted?
- 4.

What is the context in relation to the data to be analyzed?

5. What are the limits of the analysis?
6. What is the purpose of the inferences?

The phases of a research design based on content analysis are the following:

1) Constitution of the corpus (and corpora), composed in turn by the units of analysis. Possible design with a view to comparison with other corpora.

2) Data collection.

3) Categories and codes. Includes training of coders and improvement of coding. This is probably the central operation of the content analysis.

4) Data analysis, which is where various techniques such as semiotics, narratology, rhetoric, discourse analysis, etc., can come into play.

We will now examine these operations one by one.

Constitution of the corpus

A corpus is defined as a complete set of units collected and stored according to specific criteria previously defined, well marked and edited within the objectives of our project. It can be all kinds of documents, which can then be analyzed as they are or by breaking them down into smaller parts, for example, the scenes of a movie, the news of a newspaper, the photographs accompanying those news or the main plots of the episodes of a fiction series. Such a structured set of units is collected in order to be analyzed and to observe in them the presence of patterns, recurrences, variations and, above all, meanings.

A corpus can be very numerous or very populated. In order to facilitate the analysis while a corpus of these characteristics is being formed, it is very common to break it down into segments, so that the corpus, in reality a work in progress that can take a long time, or that can be nourished as new units are produced or found, will be composed of corpora. Corpora are, therefore, articulated parts of a larger corpus.

There are several types of *corpus* (and *corpora*):

1. General.

Synchronous: they are formed according to a segment or temporal evolution.

3. Historical: when they recover units produced in the past, generally ordered according to an established temporal periodization.

4. Varied, as they are completed according to a combination of criteria.

The units of the corpus are stored and recorded, for example by means of a database, using record fields that identify these units. The database itself that we design for this purpose can also be used (there are fields generally called "containers") to store these units, whether they are textual documents, images, videos, sounds or any other element.

The purpose of creating a corpus is, of course, to analyze it later by generating and applying categories and codes, in order to identify, for example, concordances or semantic meanings, in a comprehensive and systematic way.

The production of a corpus will, in turn, give rise to two types of methodological approaches: corpus-based and corpus-driven. This is a concept that comes from linguistics. Both approaches work with a corpus, but while corpus-driven analysis systematically goes through all the units of the corpus in search of patterns and recurrences, corpus-based analysis uses it instead to expose, test or exemplify theories and descriptions formulated before the constitution of large corpora allowed the other approach. Elena Tognini-Bonelli summarizes it this way:

In a *corpus-driven* approach the commitment of the linguist is to the integrity of the data as a whole, and descriptions aim to be comprehensive with respect to corpus evidence. The corpus, therefore, is seen as more than a repository of examples to back pre-existing theories or a probabilistic extension to an already well defined system. [...] Examples are normally taken verbatim, in other words they are not adjusted in any way to fit the predefined cate-

gories of the analyst; recurrent patterns and frequency distributions are expected to form the basic evidence for linguistic categories; the absence of a pattern is considered (Tognini-Bonelli, 2001: 65).

Normally, in the absence of a theory or even a set of well-established categories, a corpus-driven approach is recommended. While this approach is inductive (bottom-up, from detail to generalization), the other, corpus-based analysis, is deductive (from generalization to detail). One looks for the rule. The other seeks confirmation of the rule.

Modern digital techniques allow the construction and management of very large corpora. The tendency is to handle what are called machine-readable texts (or, more generally, documents), which can also be marked up, for example using XML.

To build the corpus, the operations to be performed are:

- 1) Define the principles and characteristics to be met by the units, in order to proceed then to their systematic and exhaustive collection.
- 2) Define the strategies for collecting these units, e.g., if any software is needed for this purpose.
- 3) It must also be decided how to store and catalog these units, for which it is recommended, as we have said, to create a database. This will

allow not only to store but also to register these units.

- 4) Depending on the format of the units, it is possible that, before being able to operate with them, other operations may have to be carried out: technical format conversions, transcription and editing of texts, if necessary orthographic modernization, translation into another language, etc. and, finally, and if necessary, their marking.

Categories and analysis sheet

There are basically two types of categories: formal or registry categories, which identify the units of study, and content categories, which are the ones that will be used for the analysis. The latter must be homogeneous, pertinent (related to the research objectives), clear and productive. The categories can be classified into groups, which will correspond to the variables. The categories should cover all the variables and aspects reserved in our design for resolution by means of the content analysis technique, and should therefore be exhaustive. They should also be exclusive; there should not be two categories to define the same trait or phenomena. And they must be, therefore, precise, and therefore relate to the explicit objectives of the research. We summarize it in this table:

Characteristics of categories

Homogeneous

Pertinent
Clear and specific
Productiv
Exhaustive
Exclusive

Source: Own elaboration

When designing the sample and identifying the units of analysis, a comparison could be made between a survey questionnaire and the analysis sheet for content analysis, since in both cases the appropriate questions must be asked to obtain answers that are useful for the research objectives, whether to question individuals (surveys) or communicative products (content analysis). First of all, it is necessary to differentiate the questions between identification categories (name of the medium, date, section, genre, page, size occupied, etc.) and topical categories (referring to the contents of the messages, responding to the research objectives). In order to be productive when collecting data, it is also necessary to delimit the scope of each category.

Categories are closely related to some interpretative techniques, such as grounded theory, designed to generate inductive theories (or thick descriptions, actually) about our object or case(s) of study and the universe it may represent. It is based on the systematic analysis of data and, simultaneously, the analysis of the same

around previously established categories that are adjusted, modified and reordered as the analysis is carried out on the universe or corpus until theoretical saturation occurs and the application of the categories no longer yields new results. The objective is to discover precisely which are the central categories.

As for the procedure, the idea is to draw up a category tree, an analysis sheet and instructions for data mining. Therefore, a codebook will also be generated.

The analysis sheet is the instrument to be implemented on the selected sample. On the card, the various categories are arranged, which should also contain several response options (as in a questionnaire). In this case, the response options are called codes and must show all possible manifestations of the analytical category.

The codes must meet exclusion criteria (they respond correctly to the category and do not overlap with others) and sensitivity criteria (they are productive and serve to extract data, eliminating the rest).

The codebook is the researchers' instruction manual to ensure that the conditions of replicability and triangulation are met. The codebook prevents researchers from making subjective decisions on their own. It will therefore establish rules and formulas for data reliability and validity.

Data analysis

Once the categorization and coding have been carried out, we move on to the analysis of the data themselves, depending on the specific technique of content analysis itself. In general, we proceed to establish the counting rules, once we have marked the presence of these categories in the units that make up our corpus: presence/absence, frequency, intensity, direction, order or contingency are values that can be operationalized.

It is advisable, to begin with, to carry out a pilot test. Pilot tests are used in surveys, experiments and content analysis. Its usefulness is to test the selection of the sample, the units of analysis and the design of the analysis sheet and thus to improve them before their definitive application. It is performed on a small selection of contents that are part of the sample. Any deficiencies that may appear will be recorded as incidences and thus the exclusion and sensitivity are refined.

Likewise, some mechanism will be established to ensure the validity of the data. We can distinguish two types of validity:

- 1) Intersubjective validity= The same data is considered valid by two or more people when they apply the same instruments to validate it (quality of objectivity). Thus the researchers have the guarantee that

the data collected by the whole team will be valid.

- 2) Intrastudy validity= It fails when the same researcher modifies the criteria during the course of data collection. The statistical procedures Scott's Pi index or Cohen's Kappa (see Wimmer and Dominick, 1996) make it possible to calculate the level of differences in the data collected, to assess whether it is necessary to adjust the codebook and start again (if the variations are significant).

In general, and for the sake of simplicity, rather than formulas or coefficients, we prefer to speak of validity criteria.

- 1) Stability: The results must be stable and homogeneous over time, both when the same methods are applied in a longitudinal study and when a pre-test is performed and then the technique is applied to the entire corpus.

- 2) Reproducibility: The analysis is correct when it can be recreated in different situations (test-retest), and also when it is applied by several coders (test-test).

- 3) Accuracy: The analysis must conform to a previously established protocol, which all coders must respect, and is related to a norm or an agreement that must be produced both within the research group itself and according to the standards of

the international scientific community. For example, taking similar analyses as a model.

Of these, specialists insist on the second, which is also called replicability. Klaus Krippendorff introduces the concept as a further characteristic of this procedure. Content analysis works with *corpora* that are understood to be "immovable", "insensitive to variation" (analysis of a literary text, for example). For this reason, in a selected and coded sample, applying the same procedures, the results must be the same, even if the researchers change.

Once this pilot test has been passed, we proceed to the real analysis. To this end, a protocol is established, which includes precise rules such as the description of the characteristics of the corpus and corpora, if any, of the units of analysis, categories and codes, their application, the subsequent treatment of the data and even the design of a database that allows us to systematize the analysis, always remembering that we are looking for patterns and variations.

Context, on the other hand, is very important in content analysis. According to Krippendorff, it contributes to conceptualize the portion of reality that originates the analyzed text. In the analysis of mass communication, the context can be the characteristics of the communicator, the effects of

the message, the degree of public tension, the socio-political climate, the processes of value mediation. The context (surrounding conditions, antecedents, consequents, etc.) must be constructed by the analyst. The analyst's task also consists in establishing the logical limits to the context. The purpose or objective of the inferences must be clearly stated. Content analysis provides vicarious information and formulates inferences. The analytic construct is provided by the relationship between the data and its context. The tests needed to validate the result are specified before starting the research. The methodology advances only if the results are validated. There is no place for singular or insufficiently conceptualized cases.

All the aforementioned procedure is summarized in this table:

Design
Units of analysis, variables and categories
Matrix for analysis
Coding guide
Pilot test and execution
Results and analysis

One of the most attractive and productive techniques possibly applied to the study of the media is the proposal of the American professor David L. Altheide, which he calls Qualitative Document Analysis (QDA) or Ethnographic Content Analysis. Altheide, which he calls Qualitative

Document Analysis (QDA) or Ethnographic Content Analysis, and which he has productively applied to media such as television or the Internet (see Altheide, 1987, 2000 and 2004). This approach aims to carry out an exhaustive monitoring of certain media content (discourse tracking) with the objective of transforming research questions into categories, which relates it to grounded theory. Altheide's proposal is both an interpretative and thematic textual analysis, which adapts to and takes into account media logic. It is based on both symbolic interactionism and structuralism. In symbolic interactionism because it understands that the ultimate meaning of any text or discourse lies in the interpretation of the cultural material by each actor (producers or users, for example). In structuralism, because it necessarily takes into account the cultural context of the messages.

The researcher himself from the University of Arizona, USA, defines his proposal as follows: "Ethnographic Content Analysis consists of reflexive movement between concept, development, sampling, data collection, data coding, data analysis, and interpretation". In reality, these are the same operations followed by any type of content analysis, quantitative or qualitative. The analysis itself, in Altheide's proposal as in many other types of content analysis, is carried out:

- 1) Comparing items.
- 2) Enumerating patterns, variations and trends.
- 3) Examining denotative and connotative changes.
- 4) Combining words and searches to find patterns and thematic recurrences.

Discourse tracking can be carried out using databases, Boolean searches and the possibility of adding or modifying categories. Altheide's qualitative or ethnographic content analysis, which aims to analyze the frequency and variety of messages and their characteristic features, or categories, is in turn based on:

QDA. <i>Qualitative Document Analysis</i>
Frames
Formats
Topics
Other media elements <ul style="list-style-type: none"> Rhythm Flux Space
Source: Altheide, 1987, 2000

4. Surveys

The survey has been defined as a systematic search for information, generally based on probability sampling, to question a group of people about research questions and variables.

The survey is presented as a tool that will allow statements to be made about sets, not about individuals in particular. It serves as an "approximation to the knowledge of a social or collective fact", not to decide whether something is true or false. The extensive nature of the survey is intended not to delve into peculiarities, but to privilege the uniformity that will account for a particular trend. The objectivist criterion predominates.

The questionnaires are the result of a process of operationalization of concepts that operates with precision.

This technique has benefits and some weaknesses, which we point out in this table:

Benefits	Weaknesses
It is possible to get many data in relatively few time	Representativeness problems (percentage of answers)
Structured data	Lack of spontaneity
Useful to analyze attitudes, values, opinions and beliefs.	Not so useful to analyze complex problems of social interaction.

Source: Own elaboration

Basically, there are two types of survey: the structured survey, which is based on a questionnaire with closed

questions, and in which participants are asked to answer by choosing from the options offered, and the unstructured survey, which poses questions that can be answered openly. The latter poses more problems than solutions, since the questions are much easier to prepare than in the structured survey, but do not allow the coding involved in the closed questions that we will see below.

There are other types of surveys, which are shown in this table:

Type	Contents
Customized	Data (censos)
Collectiva	Estados de opinión
	Behavior

Source: Own elaboration

In this table, as we can see, we distinguish personalized or collective surveys, although it can be said that in reality the first typology responds not so much to surveys of a single person as to surveys adapted to different types of informants, by segmenting or stratifying the universe to carry out a sampling system of this type. For example, the survey questionnaire will be adapted to men and women, if that is a criterion for stratification, or it will be done by age segments, or even according to some questions, posed as

a gateway or filter to others; if the answer to those questions is negative, a subsequent block of related questions is skipped.

The survey design goes through the following phases:

Survey design
Type of questions: action, information, intention, opinion
Filter questions and control questions. Sociodemographical data
Writing, introduction and procedure
Pretest, codification

Source: Own elaboration

The technique for designing the questions will follow these steps: first, there is a series of registration questions, in which personal data of the respondent is collected: age, profession, whatever is considered necessary. The questions asked thereafter must be necessary, without being superfluous or redundant. Respondents' time - and their patience - are limited, so it is best that the time a survey lasts no longer than half an hour. Questions should be short and unambiguous; only one question is asked at a time. They should be clear, so that there is usually only one answer option.

The questions should be discrete, usually ordered from the general to the particular and in a hierarchical order, because sometimes one depends on

the other. Finally, the questions should be formulated in a logical and intelligible manner. The wording of the questionnaire, which is a key aspect for the success of the research, should be clear, without ambiguities or technicalities, and should be perfectly understandable to the respondents (scientific language and jargon are not applicable unless the survey is intended for researchers or experts in the field).

Filter questions discriminate individuals, either to choose who will respond to the survey, or to create "pathways" within the survey. For example, this question is a filter question ("Information consumption. Do you do it through social networks?"). The next question can only be answered if you have answered yes to this question ("If yes, please state the social networks you use for information").

The control questions have the function of checking the veracity of the answers. They are usually non-consecutive and refer to objectifiable facts, habits and customs, while consistency questions are used to check the respondent's coherence, inquiring whether he/she does not present major contradictions in terms of opinions and beliefs. Nor are they usually consecutive, for obvious reasons.

The formulation of the questions will be done formally using one of the following modalities:

Writing and formulating questions	the research, the instructions for filling it in and thanking the participants and guaranteeing confidentiality. It should be borne in mind that very long questionnaires can be more easily abandoned.
Dichotomic	
Multiple choice	
Scales: Likert and Guttman	
Semantic differential	Next, the usefulness of the questions is tested and the questionnaire is adjusted. A pilot test is launched with a small number of informants, and if the test is passed satisfactorily, the survey is carried out in its entirety.
Hierarchy order	
Forced choice	
Filling the blanks	

Source: Own elaboration

Dichotomous questions are binary and exclusive, allowing only one or another answer, or sometimes three (positive, negative, neutral or don't know/no answer). Multiple-choice questions allow a choice between several answers, either exclusive (only one answer is allowed) or combined (more than one answer is possible). Others ask for a graded response (a Likert scale or a semantic differential scale). Other types of questions are those in which an attempt is made to force an answer ("If you had to choose one of these options, which one would you choose?") and, finally, there are open questions.

Since it is not always the person who designs the survey who carries it out, it is necessary, in addition to the questionnaire, to draw up instructions for its completion. The questionnaire will begin with a brief introduction explaining the subject of

The answers have to be coded and tabulated, so they must be assigned values or weights, because they will then be processed with quantitative computer programs, such as SPSS, which only work with this type of numerical data. The answers sought should be comparable, operational. The variables must be defined conceptually and operationally. It is not always necessary to define them (age, sex), but many require a conceptual and operational definition to be able to work with them (stereotypes, values). The variables must be measurable, exhaustive and exclusive.

In turn, the operationalization process consists of specifying the research problems in precise questions (dimensions), following strict criteria of objectivity, proportionality and precision. This and the work with variables are the basic elements of the survey.

Operationalization is an empirical translation: that is, it consists of making the theoretical constructs that represent the concepts observable. Communication research usually works with concepts that are not easily observable directly, and which require the researcher to make them observable, a procedure that is carried out by means of indicators.

Theoretical concepts, when observed and measured, are broken down into their empirical dimensions and indicators. We must ask about disaggregated indicators (training, level of studies, income, type of work, income, parents' level of education, parents' income) that allow us to construct the "index". The indicators must be quantitative (or scalar ordinal) in order to construct the index. In other words, each of the indicators is quantified and the resulting measure of the index is obtained; the social status of a person or group of people is known quantitatively.

Finally, the scales make it possible to establish differences of degree between individuals with respect to a value or a variable, which also make it possible to detail the results of the survey in greater detail. An intermediate point (which can be considered neutral or indifferent) can be obtained by means of the odd scales. The even scales do not allow this, so the respondent must express himself in one way or another. The technique of

scales makes it possible to observe the attitudes of the respondents. There are three main scales in social science practice and communication research: the Likert, Thurstone and Guttman scales.

Likert scale: Likert created it in 1930. Renis Likert simplified Louis Leon Thurstone's scale (early 20th century). It is an ordinal measurement system. The concept to be studied is broken down by means of a series of statements to which the respondent must agree or disagree, by means of four or five options. All possible dimensions of each concept should be included. Each answer deserves a score that will serve to measure the attitude of the respondents.

Semantic differential scale

Pairs of opposing adjectives are used to measure attitudes in relation to an object or fact.

Guttman scalogram:

The scalogram method is used to measure subjects, stimuli and attitudes. Responses are scalable, so that if the respondent accepts the items above the one he/she has chosen. (e.g., income level, or level of education).

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