# Standards for Quality Assurance in Market and Social Research

This English version is a translation of the original German version;
in the event of variances, the German version shall take precedence over the English translation.

Published by:
ADM Arbeitskreis Deutscher Markt- und Sozialforschungsinstitute e. V.
Arbeitsgemeinschaft Sozialwissenschaftlicher Institute e. V. (ASI)
BVM Berufsverband Deutscher Markt- und Sozialforscher e. V.
Deutsche Gesellschaft für Online-Forschung – DGOF e. V.
November 2023/English version April 2024

## Contents

## Introduction

Market and social research projects must be carried out on the basis of recognized scientific rules. This catalog of quality assurance standards provides a comprehensive framework for orientation. It documents and describes the quality requirements for market and social research projects at each step of the research process.

This catalog of standards for quality assurance can thus make a decisive contribution to strengthening and deepening the necessary trust of clients, the media and the public in market and social research and its services, methods and principles.

Market and social research projects are usually caught between the conflicting priorities of scientific quality, availability of results and agreed budgets. The quality of the research results is therefore also largely dependent on the requirements and expectations of the client.

The national and international codes of conduct for market and social research, such as the ICC/ESOMAR International Code of Conduct for Market, Opinion and Social Research and Data Analytics, the declaration for the Federal Republic of Germany presented in this Code and the various guidelines of the German market and social research associations must be observed.

This catalog of standards for quality assurance corresponds to the current state of market and social research, both scientifically, methodologically and technically as well as in terms of the legal framework. It is reviewed at regular intervals and adapted or supplemented as necessary, depending on the further development of scientific knowledge, research methods and research-relevant technology as well as changes in the framework conditions. At this point, reference should be made to ISO 20252:2019-02 "Market, opinion and social research, including insights and data analytics - Vocabulary and service requirements" and DIN SPEC 91368:2022-10 "Sampling for scientific surveys in market, opinion and social research - Quality criteria and documentation requirements", which contain comprehensive aspects for individual methods and target groups.

Legal claims are not affected by the standards for quality assurance in market and social research. The legal situation is based on priority standards, in particular statutory and contractual regulations.

# 1. General aspects of quality assurance

Market and social research projects typically consist of various research steps. Their implementation and the quality of the research results must be constantly checked and ensured. This requires quality management and quality control. Furthermore, training for employees and possibly freelancers, which meets the scientific and methodological requirements of market and social research, is necessary. Additional important aspects of quality assurance are the proper storage and safeguarding of project and research documents and the guarantee of confidentiality.

## 1.1 Quality management / quality control

### 1.1.1 Quality management

Quality management is required to ensure that the quality requirements of the individual steps of the research process are met for each study conducted. This is used to control and monitor the quality-relevant work steps and measures in the research company. The implementation and control of the individual research steps must be described and the respective responsibilities defined in quality management documentation. This documentation must be checked regularly to ensure that it is appropriate and up to date. It should also be available in a version that can be submitted or handed over to the client.

The responsibilities, roles and content of quality management must be clearly defined and communicated to those involved in the project.

### 1.1.2 Control of the individual research steps

The implementation and control of the individual research steps in the executing company or institute must be described in detail in the quality management documentation.
This documentation must be accessible to and known by all employees and, if applicable freelancers, at least those parts that are relevant to their respective field of activity.

### 1.1.3 Dealing with errors in the research process

Error management with regard to the individual research steps is a part of general quality management and must be included in the documentation. Any errors that occur must be recorded and, if possible, rectified during the course of the investigation. If errors occur repeatedly, the organization of the research processes must be modified appropriately with the involvement of those concerned. The modification must be documented.

### 1.1.4 Dealing with complaints from the client

Any complaints from the client must be responded to within a reasonable period of time. Measures taken as a result of the complaint must be presented to the client in appropriate detail. Even if a complaint proves to be unfounded, this must be explained to the client and documented.

## 1.2 Required training courses

### 1.2.1 Training and further education of employees

The training and further education of employees covers general knowledge that transcends individual projects as well as project-related knowledge. Employees must be adequately trained to

work on market and social research projects. As applied research, the industry is constantly developing scientific methods and instruments. This must be taken into account by providing employees with appropriate further training.

If carrying out research requires specific subject matter or methodological knowledge that cannot be assumed for the group of people involved, appropriate project-related training must be carried out.

All individuals involved in the study must be informed about the data protection and professional regulations for market and social research.

The individual measures must be documented in a suitable manner.

### 1.2.2 Training and monitoring of interviewers

The quality of empirical results in interviewer-supported surveys is influenced by the behavior of the interviewers. Depending on the interview style (qualitative or standardized), new recruits must become familiar with the basic rules of conducting interviews. The knowledge acquired must be verified by means of trial interviews. Depending on the results of the trial interviews, the training measures should be further intensified. The training content must be documented and made available to the trained persons in a suitable form.

If technical aids are required for conducting interviews (notebook, interview software, etc.), technical training and an introduction to handling must be provided. The success of this training must also be reviewed.

The general and technical training must be supplemented by project-related content training (content briefing). The involvement of the client is desired, provided this is not ruled out from a research point of view (e.g. in the case of double-blind tests). Listening in on the interviews for quality assurance purposes is also advisable if both the respondent and the interviewer have given their consent.

In the case of face-to-face surveys, especially in the case of cluster samples with visits to sampling points (random route method) without a complete list of addresses, the interviewers require particularly intensive monitoring, for example by making follow-up calls and revisiting the routes.

Constant monitoring of the interviewers' performance is recommended for every survey. Here, the performance is not measured by the quantity of interviews conducted, but by their quality.

### 1.2.3 Training of moderators

The basic prerequisite is general training in moderation techniques. In addition, it is essential that the moderators of group discussions, explorations or expert interviews are familiarized with the specific topic. The aim is to provide them with sufficient knowledge for moderation and not to turn them into experts themselves. The briefing should enable them to understand the content of the statements made by the participants in the study and to categorize them correctly. In some cases, it has proved useful to provide the moderator with professional support (e.g. project management or a contact person at the client’s end) to whom they can turn with any factual queries during the course of the research. The expert advisor does not actively participate in the discussion.

## 1.3 Storage and protection of project and research documents

### 1.3.1 Labeling

All documents belonging to or generated during a project must be marked with a unique project number. The documents must be accessible to the responsible members of the project team at all times.

### 1.3.2 Duration of storage

In accordance with ISO 20252:2019-02, specific project documents required for the traceability and replication of the project must be kept for at least 24 months or as agreed with the client.

Both anonymized and pseudonymized primary data sets must be stored for at least 12 months or as agreed with the client.

In addition, the statutory retention and limitation periods must of course be taken into account.

### 1.3.3 Protection of documents / materials

Suitable technical and organizational measures must be taken to ensure that access to project-related materials and data is restricted both physically and in terms of IT to the authorized groups of people in the company or institute carrying out the project. These measures must be documented and regularly reviewed. All project participants must ensure that the documents and materials relating to an investigation are not damaged, destroyed or stolen through careful handling and proper storage.

## 1.4 Awarding services to subcontractors

When selecting subcontractors, it must be checked whether their personnel and equipment are sufficient to carry out the parts of the research contract to be awarded in accordance with the specified quality requirements. Subcontractors must be contractually obliged to comply with the specified quality requirements. Appropriate control options must also be agreed upon. End customers must be informed in the research proposal if parts of the research contract, such as data collection or statistical analysis, are subcontracted to other companies. See, for example, the transparency criteria of the ADM (https://www.adm- ev.de/leistungen/transparenzstandards/) and the BVM guidelines (https://www.bvm.org/praxishilfen-qualitaet/leitfaeden/).

Subcontractors must be informed by the executing company or institute in such a way that they are able to carry out the parts of the research contract awarded to them in accordance with the specified quality requirements.

The same conditions essentially apply for the coordination of international studies and the associated awarding of contracts to subcontractors in different countries, as for the awarding of parts of a research contract to external subcontractors for national studies.

## 1.5 Transparency

Maximum transparency makes a central contribution to quality in market, opinion and social research projects and thus builds trust. Only through complete transparency in the offer, implementation, analysis and, especially in the reporting or delivery of the commissioned service is it possible for all involved parties to gain a comprehensive and objective view of the quality.

See, for example, the transparency criteria of the ADM (https://www.adm-ev.de/leistungen/transparenzstandards/) and the BVM guidelines (https://www.bvm.org/praxishilfen-qualitaet/leitfaeden/) and Gesis (https://www.gesis.org/gesis- survey-guidelines/home).

The research report must include at least the following points:

- Name of the client
- Name of the research company conducting the study
- Research task
- Target group of the study – total population
- Survey methods and survey design or data basis used
- If applicable, sample size and sampling method used
- If applicable, statistical error tolerance of the results (confidence interval)
- Research period
- If applicable, research materials, e.g. questionnaire
- If applicable, applied weighting and analysis methods

However, business secrets and statutory and contractual confidentiality obligations must be observed.

## 2. Project inquiries and contracts

The foundation for collaboration on market and social research projects is the mutual trust among all parties involved. The aim of the cooperation (especially between client and contractor) lies in the joint search for the optimal solution to the research question, in combination with an adequate price-performance ratio and timeline. The starting points for this are as precise a definition of the task and objective as possible, along with a transparent description of the procedure, taking into account the specific requirements of the research object. For straightforward or recurring studies, a quotation can often be prepared quickly. In the case of complex tasks, it is important to think through the approach and concept carefully, in order to find an approach that is appropriate for the research objective. Sufficient time should always be allowed for this when preparing the quotation. In the case of commissioned research, initially, there is a project request from the client or a project tender.

### 2.1 Invitation to tender, project inquiry, project tenders

Invitations to tender are either issued directly by the client or published on tender platforms. The basis is usually the description of a research question or a research approach. In order to arrive at an adequate research approach, it is necessary to familiarize oneself with the research question. Only in this way is the executing company or institute capable of assessing whether a research approach sketched out by the client is suitable, or whether a better approach can be proposed or, if necessary an additional alternative. The quality of a research project is already decided in this coordination process between task, objective and research approach.

If the services are clearly defined by the client and only a cost quotation is required, this should be made clear by the client.

The client's request must state the deadline for submission of the offer. The decision criteria for awarding the contract should also be specified.

The basis for a meaningful and clear proposal is a meaningful and clear project inquiry from the client. This allows the submitted proposals to be compared.
The BVM's "Tendering Guidelines" provide clients with exemplary information on the content of tenders (https://www.bvm.org/praxishilfen-qualitaet/leitfaeden/).

### 2.2 Response to inquiries, preparation of proposals

If this is not already clear from the request itself, it must be clarified whether the client requires a research proposal or merely a cost estimate. In order to avoid misunderstandings and misinterpretations, it is recommended that both sides discuss the task and the methodological approach before proposal submission. If there is a need for modification or optimization of the research approach proposed by the client, the contractor must point this out to the client. The possibility of modification and optimization should already exist in the proposal phase in order to achieve the best possible quality for the project.

If parts of the planned research project are not sufficiently specified in the request and the existing ambiguities could not be clarified through corresponding inquiries, the client must be explicitly informed of this.

The key components of a proposal for market and social research projects are specified in more detail below.

### 2.2.1 Research design and schedule

All relevant steps of the research project must be described in the research design and a timetable drawn up. This includes – if relevant and planned for the research approach
– the implementation of a pretest. If the study design particularly affects aspects of data protection or professional code of conduct, the contractor shall present the problem in detail and if necessary, also a solution approach.

The schedule for carrying out the research is binding and should also include the time required for the individual investigation steps.

If there are alternative approaches that are better suited to solving the research question, they must be presented, justified and accompanied by a recommendation.

### 2.2.2 Cost calculation and price

The proposal contains the calculated prices for the requested services or those defined in the research proposal. The time frame within which the calculated prices apply must be specified. If the offer is not a fixed price, this must be made clear in the proposal and the corresponding variable costs must be defined and specified. In the event of changes by the client, the proposal must be adapted and renewed immediately.

The payment modalities should be specified in the proposal itself or in the general terms and conditions, which should be attached to the proposal.

Changes to the research design and schedule during the project can have an impact on costs.

### 2.2.3 Comparability of proposals

Proposals should be comparable for the client and make it possible to evaluate the quality of the solutions offered during the proposal process. Further information can be found in the transparency criteria of the ADM ( https://www.adm-ev.de/leistungen/transparenzstandards/) and the BVM guidelines (https://www.bvm.org/praxishilfen-qualitaet/leitfaeden/) and GESIS (https://www.gesis.org/gesis-survey-guidelines/home).

### 2.2.4 Standardized procedures

If the research proposal suggests the use of standardized procedures or tools ("branded products"), these must be described. This includes both methodological information on their development, as well as the contractor's experience with this approach in the relevant product area. If the method used involves comparison with values from a database, the quality of the database (scope and structure of the comparative values used) must be described.

### 2.2.5 Delivery of results

The scope of the results delivery must be specified in the study proposal. This applies to both technical-content as well as content-strategic aspects. The technical-content aspects include analysis, tabulations, and graphical presentations of all kinds, as well as the commentary and presentation of the results. The content-strategic aspects primarily concern the extent of consulting services provided by the contractor, which must be precisely coordinated with the client. The scope varies depending on requirements. It must be specified whether the services to be provided only include conducting the study, developing the necessary instruments, and reporting, in the sense of interpreting the study results, or also strategic recommendations derived from the

results or implementation support.

### 2.2.6 Data protection and professional standards

The proposal should include a reference to any memberships of the conducting company or institute in market and social research associations. It should also refer to the necessary compliance with the relevant guidelines and professional standards of market and social research. These include the requirements of the ICC/ESOMAR International Code on Market, Opinion and Social Research and Data Analytics, and the declaration for the Federal Republic of Germany preceding this code as well as the individual guidelines jointly formulated by the German market and social research associations.

The anonymization requirement that exists in Germany and the necessary strict separation of research and non-research activities are indispensable for maintaining the necessary trust of the population in market and social research as well as the constitutional research privileges. The statutory data protection and competition regulations as well as the industry's code of conduct also apply to the clients of surveys.

### 2.2.7 General Terms and Conditions

The use of general terms and conditions can help contractual partners to clearly define the contractor's services and the client's obligations. If necessary, the general terms and conditions should refer to the membership in market and social research associations. This emphasizes the contractor's voluntary commitment to comply with the professional standards and guidelines of the industry associations. In addition, for each project it should be checked whether general terms and conditions need to be supplemented by project-specific provisions; general terms and conditions must also be continuously reviewed with regard to the current case law and legal situation. Sample texts for general terms and conditions can be found, for example, at the various chambers of industry and commerce.

## 2.3 Contracts with clients

Contracts are usually concluded between clients and contractors, as well as subcontractors, for the implementation of market and social research projects. Sample contracts can be found, for example, at the various chambers of industry and commerce.

### 2.3.1 Contract assignment

Orders are generally placed in written form. The order is based on the study proposal. If the order placement deviates from the study proposal, this must be described precisely by the client in the order placement and/or by the contractor in the order confirmation.

If the order is not placed, it is important for the contractor to find out why. In particular, the client should inform the contractor regarding weaknesses in the study design, in order for the contractor to be able to better fulfill the (quality) requirements in future study proposals.

### 2.3.2 Service contract / contract for work

The cooperation between the contracting parties is governed by a service or work contract. In the case of a contract for work, the contractor owes work. In the case of a service contract, the agreed services must be provided.

# 3. Survey designs

## 3.1 Components

A survey design consists of the following components:

1. Definition of the units of analysis (e.g. individuals, companies, institutions, cities, etc.): The units of analysis must be defined in such a way that it can be clearly decided whether an element belongs to the set of units of analysis or not.

2. Determination of the data to be collected or characteristics to be analyzed (examination or target variables)

3. Determination of the number of collection and measurement points (cross-sectional or longitudinal design)

4. Determination of the form of data collection (e.g. form of communication in surveys, data sets in secondary analyses, experimental design)

5. Sample design

## 3.2 Number of collection points and measurement intervals

Depending on the research question, a decision must be made as to whether for a primary survey, a cross-sectional study, a trend study (wave survey) or a panel study should be conducted and how high the number of survey points and their measurement intervals should be. In the case of trend studies, it must be ensured that the cross-sections surveyed at different measurement times are realized under comparable conditions, i.e. with the same sample design and the same survey and data collection method. In panel surveys, appropriate panel maintenance measures must be taken to keep panel mortality as low as possible. In addition, when specifying the study design, it must be ensured that undesirable effects that may arise solely due to the repetition of the survey (panel effects or panel conditioning) are avoided as far as possible.

## 3.3 Forms of data collection

All forms of data collection should be evaluated and documented with regard to the quality criteria of the measurement. This serves both to define the research design and to ensure quality. The forms of data collection include:

- Reliability of the measurements (exclusion or minimization of measurement errors)

- Reliability of data sources (in secondary statistical analyses and evaluations)

- Validity of measurements and data sources (congruence of measurement/data source and research object)

- Objectivity of measurements and data sources (independence of the measurements/data sources from the surveyor)

## 3.4 Collection of primary data

### 3.4.1 Reactive measurements

A reactive measurement is a measurement that can change what is to be measured. This applies to all methods in which qualitative or quantitative interviews are conducted. If interviews are planned in the research design, a decision must be made as to which form of communication should be used for contacting and interviewing the research units. The forms of communication can be differentiated according to:

- the form of administration (interview-administered vs. self-administered)
- the communication channels used (visual/textual vs. via audio)
- the survey technology used (with/without computer support or use of mobile devices)

Each of the forms of communication may interact with characteristics of the study units in the target population and may thus contribute to sample bias due to selection effects. Examples of such characteristics are:

- Physical and mental condition of contact persons and interview participants
- Equipment required for the survey of contact persons and interview participants
- Patterns of home, work or organizational accessibility

The decision to use a particular form of communication in a research design should take into account the characteristics of the research units, which may have obvious interactions with the form of communication.

### 3.4.2 Non-reactive measurements

The methods of non-reactive survey methods traditionally include:

- Physical traces (traces of wear and tear and deposits, graffiti, vandalism, garbage, traces of actions such as e.g. search behavior in the Internet etc.)
- Non-reactive observation (covert direct observation of external features, collection of GPS data, collection of different types of geodata, collection of sensor data, satellite-based data)
- Analysis of ongoing reports (e.g. population registers, police and court records, archive data, individual documents such as diaries, analysis of web statistics, etc.)
- Non-reactive field experiments (method of lost letters - "lost letter technique")
- Content analysis incl. social media analysis (analysis of verbal traces: texts, analysis of ongoing self-reports such as diaries, analysis of websites, blogs or forms of communication such as chats, WhatsApp messages, analysis of audio, image and video data)

The selected procedures must be described precisely or supported by references to the recognized specialist literature.

## 3.5 Secondary studies

Secondary studies are based on existing data sets as a result of the collection of primary data. When deciding on one or more data sets, the following aspects should be taken into consideration:

- Research objectives pursued with the primary survey
- Relevance of the data (sets) for the research question
- Survey design (sampling design, form of communication)
- Available documentation on distortions (e.g. AAPOR rates for response rates, see also DIN SPEC 91368:2022-10 Samples for scientific surveys in market, opinion and social research – quality criteria and documentation requirements)
- Weighting methods used

## 3.6 Sample design

The generalizability of the results of a survey depends on the quality of the sampling and the final sample realized.

To ensure the high quality of the output and gross sample, care must be taken to minimize undercoverage, i.e. the exclusion of subsets of the target population from the sampling frame, and to minimize potential bias resulting from undercoverage. When drawing samples from the sample population, the error should be kept as small as possible.

Even if the quality of the gross sample is good, the quality of the realized net sample may be impaired. In order to minimize the potential for non-response bias, appropriate measures should be taken to minimize non-response to entire parts of the survey (unit non-response) and non-response to specific questions (item non-response).

The extent to which the types of failure described occurred in the survey can be shown by the outcome rates of the American Association of Public Opinion Research (AAPOR). These include: response rate, contact rate, cooperation rate, refusal rate (cf. AAPOR, 2016; for an adaptation in the German context see Stadtmüller/Silber/Daikeler et al. 2019).

The rates can be determined on the basis of the final disposition codes (status code during field period). These must be carefully documented for all target persons during the field phase.

## 3.7 Probabilistic methods and non-probabilistic methods

When selecting samples, a distinction must be made between random and non-random methods. Quality criteria for the estimation of population parameters such as confidence intervals or significance can only be calculated and specified if a random selection is available. In addition, the response rate or cooperation rate achieved must be documented and evaluated (see also DIN SPEC 91368:2022-10 Sampling for scientific surveys in market, opinion and social research – Quality criteria and documentation requirements).

Regarding non-random methods, quota sampling is particularly used in market and social research. This is particularly advantageous if the sample population (see 3.6) cannot be produced (for both theoretical and research-economic reasons). Quota samples can be described as stratified samples with non-random selection in the strata (see Särndal, C.-E., Swensson, B. & Wretman, J. (1992). Model assisted survey sampling. New York: Springer).

For samples involving interviewers, the number of interviewers must be documented, as well as the maximum number of interviews per interviewer. In the case of quota samples, the quotas used must also be documented.

In addition, there are non-probabilistic methods that are largely based on the self-selection of respondents (e.g. calls for participation in research projects) or occur arbitrarily (e.g. surveys of passers-by). A clearly larger self-selection bias than with random or quota samples must be expected here. The measures that are taken to control this bias or to minimize it must be documented.

Depending on the operator, access panels use both probabilistic and non-probabilistic methods to recruit panel members. All procedures used for recruitment must be documented.

Overall, the choice of sampling method can significantly influence the quality of the results. It is therefore important that the chosen procedure is documented in detail. The content of the documentation depends on the procedures used.

## 3.8 Use of composite sample designs

If different sampling methods are used for different parts of the population in sampling designs (so-called composite designs such as e.g. stratified samples), the reasons for not using a direct random selection of study units should be presented (e.g. insufficient selection basis for sample selection from the total population, minimization of sample variance, etc.). If different subpopulations are to be included, the respective selection bases and their quality must be documented (e.g. coverage of the populations included, random or non-random forms of sample selection, survey method, etc.) It should also be stated whether they can provide an unbiased estimate of the population parameters. Specifying the variance of the estimator seems helpful for this.

## 3.9 Design of questionnaires and guidelines

If a survey is the appropriate approach for a research question, questionnaires or interview guidelines are used in the research concept. Market and social research has particular expertise in this area. Standardized questionnaires, in which all respondents are asked the same questions with the same answer specifications, are an instrument of quantitative market and social research. Interview guidelines are used in qualitative market research. They can be structured to a greater or lesser extent. Often, they merely specify the topics to be addressed, possibly supported by the intended methods of data collection.

### 3.9.1 Questionnaire design

When creating questionnaires, a whole series of rules must be observed, which are described in detail in the relevant literature (cf. e.g. Faulbaum & Rexroth; 2023, Groves et al. 2009; Noelle-Neumann & Petersen, 2005; Porst, 2014). Only the most important rules are listed below.

It makes sense for an interview to be organized by topic and follow a logical structure. Within

a topic, questions usually range from the general ("Overall, how satisfied were you with the workshop visit?") to the specific ("How satisfied were you with the repair?"). The form of the question must be appropriate for the topic of the question. Closed questions require that a list of all possible answers can be created, otherwise open questions or semi-open questions should be used. In order to avoid arrangement effects, it should be checked whether randomization of the questions, items and/or provided responses is useful. The form, language and length of the questions must match the survey form and the target group. For example, very long questions are unsuitable for telephone surveys. In the case of online surveys, it must be ensured that the presentation of the questions is adapted to the respondent's device (e.g. mobile phone or laptop). Furthermore, the questions must be formulated in such a way that they are not suggestive and can be clearly understood by the target group of the survey. This applies to both the sentence structure and the choice of words. It must be possible to answer the questions, i.e. the knowledge to answer them must be available. This is to be ensured, among other things, by appropriate provided responses or filter questions. Finally, questions that lead to socially desirable answers or run the risk of violating the privacy of the interviewees are problematic. If there is any doubt as to whether a questionnaire meets the above quality criteria, a pre-test with people from the target group is required.

It is also important to know whether an issue can be answered by a single question ("single-item scale") or whether a series of questions ("multi-item scale") is necessary. Simple facts
can be captured by one question ("How likely is it that you would recommend the workshop to a friend?"), complex issues such as brand strength or working atmosphere should be captured by several questions. The initial creation of multi-item scales may require a preliminary study and a special calculation methodology. Reference must be made to the literature in this regard.

### 3.9.2 The evaluation of questionnaires

Especially after the initial draft of a questionnaire, it may prove necessary to check it again empirically. The following procedures are available for this purpose:

- Cognitive interviews to determine the understanding of the question (cf. Prüfer & Rexroth, 2005; Miller, 2014; Willis, 2005)
- Standard or field pretests in which the interviewers behave passively and only document the reactions of the test subjects.

The results must be documented in a results overview or in a pre-test report. Following a pretest, there may be indications for a modification of the questionnaire. Cognitive interviews and field pretests are usually combined sequentially, i.e. a field pretest is carried out after the questions have been corrected due to a lack of question comprehension. A field pre-test is always advisable to determine the interview duration.

### 3.9.3 Guideline design

For interview guidelines, which are used for in-depth interviews or group discussions, the same principles with regard to the structure and comprehensibility of the questions apply as for questionnaires. Suitable methods must be defined for the research question (e.g. creation of collages). In this regard, reference must be made to the literature (e.g. Kruse, 2015; see also the introductions to empirical social research).

## 4. Data collection

Market and social research uses a variety of different methods to collect data. These are essentially divided into reactive methods such as face-to-face, written, telephone and internet-based surveys and non-reactive methods such as observation, measurement and analysis of existing data, for example from social media (see also 3 "Survey designs"). In the following, the quality standards required for these methods are described.

### 4.1 Compliance with sampling requirements

For all interview-based data collection aimed at specific target groups, suitable measures must be taken to ensure that these target groups are reliably reached.
The functionality and validity of screening questions (questions to identify the intended target group at the beginning of an interview) must be ensured.

For each study, the sampling specifications defined in advance (proposal/order) must be fulfilled, checked and documented in the research company.

A suitable incentive can increase the willingness to participate in surveys. From a quality perspective, it is crucial to create a neutral incentive for participation that is specific to the study and target group, so that the type and scope of the incentives minimize distortion of the sample. In particular, the incentives should not allow any conclusions to be drawn about the client of a study. Other methods for increasing accessibility and willingness to participate, such as the flexible distribution of contact attempts or an optimal design of the contact initiation/introduction should also be considered.

### 4.2 Follow-up survey

If the sample falls significantly short of a sample specification in total or in a specific sub-sample and there is a justified fear that this could influence the research results, one or more follow-up surveys must be carried out in consultation with the client to ensure that these specifications are sufficiently fulfilled. If this is not possible, the problems encountered in sampling must be described in the methodological documentation of the study and their probable impact on the findings must be discussed.

### 4.3 Control of data collection

These quality standards and the guidelines for market and social research form the basis for the checks. Checks must be carried out on an ongoing basis, irrespective of the client's requirements. The method and frequency of the inspections must be documented so that the client can comprehend the process. In addition to specific routine checks, further checks can of course be agreed with the client.

Checking the collected data with regard to various quality aspects is already a necessary part of data collection during the survey phase, as this can detect and exclude incorrect or incorrectly conducted interviews and questionnaires that have not been completed truthfully. The result of the inspection must be documented for the client.

In addition, a comprehensive check of the collected data must be carried out, at least once the data collection has been completed (see 5.2). Suitable software solutions (in-house developments or third-party software) can be used for all checks. The solutions used must be documented.

## 4.4 Formal correctness

During the inspection, it must be checked whether the questionnaires and data sets are formally correct. In particular, the correct handling of the filter guidance and compliance with the instructions for interviewers contained in the questionnaire must be checked.

## 4.5 Completeness

The questionnaires must be checked for completeness of response. The open questions must be included in the completeness check. In the event of systematic failures, suitable countermeasures must be taken (where possible). If the amount of missing information is too large, the interview in question should be removed from the data set altogether.

## 4.6 Plausibility

As far as possible, the answers should be checked for plausibility, i.e. for contradictions in response behavior, by combining different questions. The plausibility check also includes searching for similar answers and answer patterns. Interviews with excessive deficiencies in this respect must be removed from the data set.

## 4.7 Interview duration

The interview duration is to be recorded and checked – as far as possible and reasonable. If an interview is significantly below an expected time frame, the reasons for this must be determined. If the explanation is not plausible, it should not be included in the final data set and, if necessary, be checked for forgery. Technical aids can also be used for this (e.g. software).

This may also be necessary if the interview is interrupted for too long, for example to be able to record spontaneous response behavior without being affected by possible parallel research or social interactions of the interviewees.

## 4.8 Multiple participation and artificially generated responses

In the case of surveys, suitable measures must be taken to ensure that multiple participation is excluded, unless this is expressly desired. If such unwanted multiple participation is detected, all interviews with this person must be removed.

Automated communication software (bots) represents an increasing danger in online surveys. Current options for uncovering artificially generated responses are to be used.

All measures and their results must be documented.

## 4.9 Control of data collection in oral surveys

The work of field personnel must be routinely checked both among the interviewees and regarding data material. Quality and reliability deficiencies must be identified and subsequently rectified during the inspections.

As far as possible and reasonable, the following criteria apply for interview controls including qualitative individual interviews.

Routine checks can be organized, for example, on the basis of individual interviewers or individual studies. In both cases, additional checks must be carried out, if there are doubts about the quality or reliability of certain interviewers. The control results must also be documented on the basis of the respective interviewers.

Routine checks organized on the basis of individual interviewers are to be carried out by random selection in proportion to the frequency of their deployment. Newly recruited, newly trained and full-time interviewers must also be monitored more closely. Checks must be carried out at least every six months for infrequently deployed persons. For each study, all interviews of the persons to be checked must be included in the controls. The procedure must ensure that at least ten percent of all interviews conducted are checked within a year.

Routine controls must be carried out for every study. At least ten percent of the interviews must be checked per examination. For this purpose, either all interviewers deployed are included with a part of their interviews, or only a part is checked, but with all of their conducted interviews. Additional checks in the event of doubts about the quality or reliability of an interviewer must always be carried out on the basis of all interviews conducted by this person.

Checks can be carried out either in writing (by means of control letters or cards), by telephone or in person. If initial written checks do not result in a satisfactory response, follow-up checks (preferably by telephone or in person) must be carried out. The checks must be timed so that they are completed as far as possible when the data is handed over to the client. Any quality or reliability deficiencies identified during the inspections must also be rectified before the research report/data set is sent to the client.

### 4.10 Controls for qualitative studies

In qualitative studies, quality is also determined by the type of recruitment and the review of the specified quotas for the selection of participants. These characteristics should be asked again at the beginning of the interview. If there is a deviation, the interview must be canceled or assigned to the corresponding quota group. In group discussions, compliance with the quotas must also be checked before or at the beginning of the discussion. Compliance with the quotas is documented in the volume of the report.

### 4.11 Control of data collection in written postal surveys

In the case of written postal surveys, the underlying address material should be updated. Incorrect and non-existent addresses can occur, particularly in the case of address deliveries from resident registration offices. This only becomes apparent when the returns are viewed and must be documented accordingly. In addition, a return check must be carried out, the results of which must be documented in failure statistics. Any instructions for completing questionnaires must be clearly formulated for the respondents and clearly visible.

### 4.12 Control of data collection in online surveys

Suitable measures must be taken to ensure that the specified identity of the respondents corresponds to their actual identity; any bots must be excluded. In particular, the use of personalized access codes when using links or QR codes can contribute to this.

Participation in an online survey should be possible regardless of the specific access to the interactive medium and regardless of the respondent's end device, so as not to distort the sample in this respect, unless this corresponds to the intended total population.

If an interruption and subsequent resumption of the interview with the same respondent is necessary from a methodological point of view, the research company should offer this possibility.

# 5. Analysis / data processing

Research data can be available from a (primary) survey, existing data sources as well as automatic data collection processes. It can be figures as well as texts, images, files or other forms of presentation. This section is limited to numbers and texts, although these are also partly generated from other forms of representation (such as the conversion of speech into text or the counting of events in a video).

## 5.1 Processing raw data

If the data is not yet available in electronic form (e.g. written surveys with paper questionnaires), the raw data must be checked and a suitable form of data collection selected. For example, the automatic recording of handwritten paper questionnaires is not useful if too much information is not recorded at all or is recorded incorrectly. In this case, coding by experienced individuals can lead to more accurate results. If primary data cannot be recorded at all, this must be documented.

### 5.1.1 Closed questions or figures

The results of closed questions in a survey are usually recorded electronically (interview-based or as self-completion), whereby variable names and codes of the (response) categories are usually assigned automatically by the software used. When combining and comparing different studies or data sets, the code plans must be checked for compatibility. This applies in particular to tracking or benchmark databases. Changes to the wording of the questions should also be noted.

The same applies to datasets where the time or method of data collection varies. Here, the data must be checked for comparability regarding times and, if necessary, the varying data collection methods or data definitions so that a uniform analysis can be carried out. The test or correction processes and/or limitations in the informative value must be documented.

### 5.1.2 Open questions or text

Open questions can be coded either manually or automatically or in a combination of automated and manual.

In the simplest case, an automated analysis is carried out by counting relevant words. For this purpose, either "filler words" or other sentence components are eliminated or words with the same meaning are aggregated using a synonym list. The specific processing in each case must be documented (words not taken into account, attachment of the list of synonyms, etc.)

Similarly, open questions can be counted automatically using a defined code plan.

A code plan should adequately reflect the most frequent answer categories on the one hand and the research question and its characteristics on the other.

For manual coding, one or – preferably – several people are used. They must be instructed primarily in the structure and meaning of the code plan. If anything is unclear, the procedure must be specified. The person responsible for instruction should check at least five percent of the codes. Incorrect coding must be corrected. In the event of an accumulation of errors, a new instruction and recoding of the affected questionnaires is required.

In the case of combined automated-manual coding, an initial automated coding is checked manually on a random basis and, if necessary, corrected manually. Elements that cannot be

coded automatically are manually "post-coded". The result is an optimization in terms of time and quality. The procedure must be documented.

## 5.2 Checking and cleansing raw data (see also 4.2 – 4.8)

Plausibility checks and corrections can already be created in the survey instrument (e.g. questionnaire). However, this is not absolutely necessary; the data check and cleansing of the raw data can also be carried out retrospectively. For this purpose, test software – self developed or third-party software – can be used.

### 5.2.1 Fraud attempts

Unlawful attempts to gain access to the data collection tool should be prevented from the outset if possible or, if necessary, should be subsequently rectified. These can manifest themselves in double completion or unwanted automatic data entry by bots. Indicators for data records to be eliminated can be identical data sets or internet identifiers ("user agents"). It should be noted that certain instruments, such as IP addresses or personal data, may be subsequently no longer available for legal reasons.

### 5.2.2 Formal logical errors

It should be checked whether the previously defined logic has been implemented correctly. For example, the correct implementation of filter guides should be checked (again) retrospectively, taking links and case numbers into account. (Example: The block of questions is only presented to a certain subgroup – are the case numbers correct?)

### 5.2.3 Inconsistent or implausible results

In the next step, inconsistent or implausible results can be checked. Here, the project management must decide how such results are to be handled. This can be done by eliminating the entire case or by eliminating the inconsistent/implausible results. However, it can also be decided not to make any changes (e.g. in the case of mere inaccuracies that are irrelevant or insignificant for the purpose of the investigation).

### 5.2.4 Documentation

Both the raw data and the cleansed data must be saved. All test steps and corrections must be documented, including their effects.

## 5.3 Weighting data in quantitative studies

### 5.3.1 Applied procedures

If quota samples have met the specified quota characteristics and their links, a correction by weighting, apart from a possible design weighting, is not necessary .

Random samples also usually aim to represent a population of people or households. As there is no central personal register in Germany and random sampling at the residents registration offices is only legally possible for a few surveys (under data protection law) and is also extremely complex, most random samples are created in several stages. Generally, a household is selected first and then a person is selected. As a result, the people belonging to the population may have different chances of selection depending on the size of the household.

The multi-stage sampling makes a corresponding weighting procedure necessary. In the first stage, the design-related bias is corrected and the household sample is transformed into a sample of individuals (design weighting).

Subsequently, in the second stage, the structural distortions of the sample caused in particular by interview dropouts are corrected (adjustment weighting). Only after the second stage of the weighting procedure is a representative and highly calculable sample of people available.

For intended household samples, the first weighting stage is of course omitted. The correction of structural distortions in the second stage of the weighting procedure is carried out in these cases using the known distributions of various household characteristics. To determine the weighting factors, both for samples of persons and for samples of households, it is generally possible to refer to the data from official statistics or to structural data from other current, generally recognized surveys.

### 5.3.2 Documentation

The sample structure and, if applicable, the weighting method and weighting characteristics, must be documented in the research report. Preferably, the achieved sample structure should be compared with official statistics or other reliable structural data with regard to selected structural characteristics.

## 5.4 Analysis methods

Analysis methods can include the following dimensions:

- In the case of calculating new variables or variables from collected or generated data, the calculation routine must be documented and the new variable labeled accordingly. When using the data set, it must be clear which variable was created and how.

- In the case of the use of analytical methods to generate a "higher" level of information (e.g. driver analyses, forecasts, estimation functions, segmentations or methods of so-called "Artificial intelligence" [AI]) the selection and implementation of the analysis method must be documented, in particular the reasons for the selection and use as well as the advantages and disadvantages with regard to the data basis and the purpose of the analysis.

- In both cases, it must be documented whether all data has been included in the calculations /analyses. In the case of exclusions, these must be justified and possible effects on the results described.

## 5.5 Presentation of research results

The presentation and distribution of the research results can take many different forms. The following typical forms can be distinguished:

- Method report, which contains the essential project-specific information on data collection and data processing, and in the case of surveys in particular the exact wording and sequence of the questions.

- Analysis data set (before and after corrections, adjustments or weighting, if applicable incl. syntax of the analysis)

- Unannotated number-oriented presentation (e.g. tables, charts, dashboard etc.)

- Annotated report (incl. classification or interpretation of the results, often with recommendations for action)

- Personal presentation of the research results, with Q&A, discussion and, if applicable development of measures and next steps

These various typical forms of communicating the results of the study to clients or stakeholders can be combined with each other. In any case, care must be taken to ensure that when the contract is awarded or the project defined, the client and contractor have a common understanding of the subsequent form of analysis and presentation of the results. This is therefore also a core component of every research proposal.

## 6. Consulting

The activities of market and social research companies are empirically based, scientific advisory services. Advice on the research process and during the research process is standard and has always been a positioning feature of market and social research. It includes advice on the choice of method, formulation of questions or guidelines, determination of the target group and realization of the sample, selection of the data, including automatically generated data, through to the analysis and selection of suitable statistical methods. The expectations of consulting often start earlier and go far beyond analysis (cf. 6.2). The specific experience of the research company, above all as the sum of the experience and qualifications of the people involved, is decisive for the quality of the advice provided to the client.

### 6.1 Basic principles of consulting

Market and social research companies base their consulting services on data, scientific findings (including sociology, psychology, communication research) as well as extensive knowledge gained through training and experience in various subject areas. The basic principles are in detail:

- **Scientific work**
  There are several aspects to scientific work:
  - Work systematically based on the current state of research on the respective topic
  - Use a neutral testing facility
  - Document the methodical procedure transparently
  - Present results objectively
  - In the case of publications by the client, the company or institute conducting the research is also responsible for the correct presentation; in the event of incorrect or clearly misleading presentations or interpretations of the research results by the client, the company or institute conducting the research, upon knowing this, must take appropriate measures for correction.

- **Understanding data**
  Consulting skills through the ability to assess the origin and relevance of data for solving the given research question – be it via qualitative and/or quantitative primary surveys or via data generated automatically in various processes (geodata, online usage data, shopping receipts, etc.)

- **Understanding analyses**
  Consulting skills with regard to the use and interpretation of analysis methods (e.g. multivariate methods and artificial intelligence methods).

- **Understanding people**
  Consulting competence through the ability not only to measure human behavior and attitudes, but also to evaluate them on the basis of appropriate training and experience and to interpret them in terms of the task at hand.

- **Understanding empirical social research**
  Consulting competence through the ability to optimize the entire empirical research process from the recommendation to suitable methods and all further research steps.

- **Understanding research topics**
  Consulting expertise before and after the research through interdisciplinary thematic expertise on the research topic, such as aspects of brand management, product development, communication research and trademark and competition law evidence issues as well as economic or social science topics.

- **Understanding the market and customers**
  Consulting expertise through knowledge and the ability to evaluate contextual information such as special features of the industry or brand, special features of the client's company, special features of the culture such as the client's organizational structure or special features of the personality traits of the recipients of consulting services.

- **Understanding processes and consequences**
  Consulting expertise through business management competence as well as competence in political, social and economic decision-making processes, for example assessing the financial or socio-political implications of your own recommendations.

## 6.2 Consulting levels

Comprehensive consulting in the context of market and social research projects comprises four consulting levels, which are explained as follows: understanding the problem, empirical consulting, recommendations, and implementation. The four advisory levels are not to be seen individually but are constantly interlinked. They require the consulting principles listed under 6.1 in varying combinations and intensity.

The following are always of overriding relevance: the consultant's understanding of his or her role, competencies, including the limits of consulting, as well as moderation and monitoring of the entire research process.

### 6.2.1 Understanding the problem

The first level of consulting is advising on the analysis and specification of the research task, in understanding the reasons for and objectives of the research project, in understanding and possibly supporting integration into the overall context of entrepreneurial, societal, or political questions and decision-making processes. This means consulting towards a clear common understanding of the goal, research gap, approach and solution horizon. Only this understanding can lead to optimal advice on the correct empirical implementation (operationalization) and further advisory steps.

### 6.2.2 Empiricism

The second level of consultation is empirical advice, i.e. advice on suitable concepts, suitable research approaches and methods through to suitable procedures for statistical analysis (see in particular 3 "Research design").

### 6.2.3 Recommendations

The third consulting level is a derivation based on the principles of "knowledge and experience" of recommendations, management summaries and summarized presentations. The added value of the consultation can be increased through "quality of experience" by means of comprehensible, graphically appealing or user-friendly formats.

### 6.2.4 Implementation

The fourth level of consulting is implementation consulting, often together with the commissioning company. Examples include workshops, the creation of scenarios and moderation to find solutions. Implementation consulting can lead to process consulting and process support in the implementation of the findings, provided that the commissioning company is willing and the consulting firm is competent. Last but not least, this also includes advice and support for the implementation of technical solutions.

## 6.3 Consulting services offered

The scope of the consulting service must be clearly stated in detail in the offer of the market and social research companies and for all work steps offered.

## 6.4 Transparency

The greatest possible transparency must be ensured for the consulting services offered. This applies both in general with regard to the experience of the research company and its employees and in concrete terms with regard to the specific requirements of the project offered and in relation to individual knowledge principles of consultancy (see 6.1). This also includes appropriate transparency regarding the training and knowledge background of the employees involved in the project. Only this transparency-creating information enables clients to evaluate the quantity and quality of the consulting services offered and expected – also in comparison.

## 6.5 Consulting and ethics

Consulting in market and social research follows essential ethical thought patterns and guidelines. The pursuit of objectivity and neutrality is a necessary prerequisite for this.

### 6.5.1 Consulting as a conflict model

Consultancy in market and social research works in the field of tension between companies, organizations and state institutions on one hand, and regulation, roles, people and different positions on the other. Opposing opinions, contradictions and tensions in the consultation process are common. The ethical requirement for consultation is then to timely recognize, analyze, reflect on and consciously endure such tensions and contradictions. Part of ethics in consulting is also to derive positions in contrast to the status quo and to justify and argue for them, as well as to point out alternative courses of action.

### 6.5.2 Consulting and responsibility

Consultations in market and social research usually include recommendations and proposals for measures that trigger activities and consequences. Ethics in market and social research means thinking about the consequences of consulting services.

### 6.5.3 Consulting and respect

Various groups can be involved in the consultation process, such as customers and their employees and the company's own employees. As a rule, different groups are affected by the consulting content. Consulting requires being aware of this and always showing respect, respecting the dignity of all persons and institutions involved and affected, maintaining discretion and observing existing protection needs.

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