



PRACTICAL GUIDE

How to develop digital inclusion surveys at the municipal level



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About Digital Future Society

Digital Future Society is a non-profit transnational initiative that engages policymakers, civic society organisations, academic experts and entrepreneurs from around the world to explore, experiment and explain how technologies can be designed, used and governed in ways that create the conditions for a more inclusive and equitable society.

Our aim is to help policymakers identify, understand and prioritise key challenges and opportunities now and in the next ten years in the areas of public innovation, digital trust and equitable growth.



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Published

May 2024

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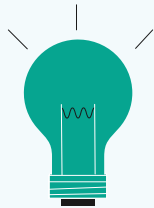
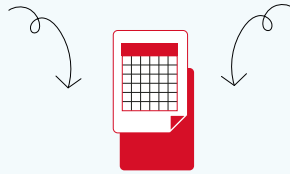
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INTRODUCTION

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Access to digital technologies and having the skills to use them and use them efficiently have become essential aspects of everyday life. However, meaningful access and use of digital technologies is uneven and leads to inequalities.

The two sides of digitalization—digital inclusion and exclusion—bring about the concept of the *digital divide*, a rapidly evolving phenomenon with many facets.

By digital divide we mean the disparity or imbalance between access to, and the use and benefit that people get from digital technology.

Coined in the nineties, the term *digital divide* refers to the gap between people who have digital access and skills and those who do not. Specifically, it addresses the existing inequality between those who can access the Internet and benefit from digitalization, and those who are unable to connect or face limitations for technical or financial reasons or due to a lack of skills.

The digital divide can negatively affect public participation, education and economic opportunities, among other things.

Digital exclusion and social exclusion tend to go hand in hand, so a lack of appropriate digital skills can lead to missed opportunities to improve living conditions, and a lack of socioeconomic resources can be one of the causes of the digital divide.

This document is a practical guide to developing surveys on digital inclusion (and exclusion) at the municipal level. It is geared towards public administrations and local government personnel, and people who study or are interested in the subject. This guide's purpose is to provide those interested with resources to conduct a statistically representative survey.

A digital inclusion survey should assess the digital divide taking into account not only internet access (known as *first level divide*) and digital usage and skills (*second level divide*), but also the benefits obtained from using the Internet (*third level divide*). In addition, it should enable looking beyond the traditional concept of *digital divide* to provide information that facilitates analysis of the *socio-digital divide*.¹ This is relevant, as it has been observed that the combination of digital, social and economic inequalities aggravates existing exclusions, making digital inequality another form of socioeconomic inequality.

A *representative survey* offers the chance to compile statistically meaningful data to understand the extent of the digital divide in the municipal scope, as its objective is to provide local public administrations with the necessary tools to understand, measure and address the digital divide within their municipalities. Furthermore, it helps identify which population groups are most digitally vulnerable. Thus, the information gathered should allow for more effective targeting of digital inclusion efforts.

This assessment is essential for guiding public policies and designing projects and initiatives that address specific community needs based on documented facts. Thus, local entities become agents of change with the capacity to reduce the digital divide and foster digital inclusion in their municipalities.

¹ The term *socio-digital divide* expands on the concept of digital divide by bringing to light that digital inequality is another form of socioeconomic inequality.

What is at stake?

Although urban zones have broader and higher quality internet coverage than rural zones, digital divides remain a challenge in cities all over the world.

The thinking around digital inclusion has changed drastically since the COVID-19 pandemic. The rapid digitalization of society requires cities to keep up and make sure they meet the needs of city residents.

Without a clear understanding of how local populations experience and use digital technologies, municipal governments are in the dark when planning digital strategies.

Additionally, segments of the population without significant access to these technologies tend to belong to historically underprivileged communities.

As digitalization advances, cities run the risk of amplifying existing social, economic and cultural inequalities.

Until now, digital inclusion policies have focused mainly on ensuring access and training in digital competencies. However, some expert voices question the existing frameworks and indicators, as they do not adequately reflect a broader issue: the lack of knowledge to ensure an autonomous use of the internet and the effective utilization of digital resources.

Some of the new proposals to measure digital inclusion go beyond access and skills to include the advantages and benefits that come from using the Internet.

Digital technologies are not a guaranteed driver of sustainable development. Policymakers must take a comprehensive, rights-based approach to ensure that urban digital transformation strategies significantly advance urban digital access.

This practical guide is based on the research conducted by Mobile World Capital Barcelona to provide municipal governments and policymakers with a practical approach to understanding and measuring the digital divide.

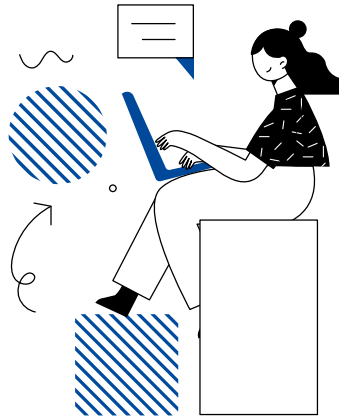
Who is this guide intended for?

This practical guide is a companion tool aimed at technical staff of public administration and local entities, research personnel, and other interested persons who wish to develop a representative survey.

The implementation of the survey does not require specialized or in-depth statistical knowledge. However, it should be taken into account that, in some cases, specialized professional support may be desirable.

Who can conduct the survey?

Those responsible for conducting the survey should meet certain criteria:



A quick note for readers outside of Spain:

This guide was developed by stakeholders located in Catalonia, Spain. Many of the references and resources mentioned in the text and annexes are fruit of this co-creation process with local stakeholders and are in Catalan or Spanish.

Nonetheless, many of the lessons and insights apply to other local governments beyond this context.

They should be interested in learning the state of the digital divide in their municipality and the need (or duty) to develop digital literacy and training projects for the public.

They do not require specialized knowledge in the field or extensive prior experience.

They should be willing to conduct a statistically representative survey on the state of digital inclusion or exclusion of the population at the local level.

How can this guide be used?

This practical guide can have different uses: from fully autonomous use, to use with specialized assistance, depending on the statistical knowledge of the person conducting it.

Unless you have in-depth statistical knowledge or your local entity has a statistics department at its disposal, it is advisable to study other local field experiences and seek the support of an expert to carry out the fieldwork.

You can establish partnerships with experienced agents from other local systems to share stories about the phases of the project implementation process, as well as get possible recommendations for support.



How was this guide developed?

This document was developed from the voices, perspectives and knowledge of different agents with experience in digitization surveys in Catalonia, assembled as a working group.

The working group, led by the Mobile World Capital Barcelona Foundation (hereafter MWCcapital), engaged in a co-creation process and convened three times in 2023 to address the shortcomings identified at the municipal level regarding the availability of useful local data, and to gain insights from similar past experiences.

In addition to MWCcapital, the following entities participated in the working group, in alphabetical order: Barcelona City Council (including Barcelona Activa), l'Hospitalet de Llobregat City Council, Mataró City Council, General Management of Societat Digital of the Government of Catalonia, Ferrer i Guàrdia Foundation, Opinòmetre (market and opinion research institute) and the Open University of Catalonia.



What does a representative survey look like?

Any data collection tool has strengths and weaknesses, and representative surveys are no exception (see Table 1).

While it is true that a survey helps to understand the overall trends of a population, it cannot cover all aspects of a social reality. In this regard, when the goal is to conduct an in-depth study of the digital divide, it is recommended to supplement the surveys with additional studies and data:



Qualitative studies

These can reach greater analytical depth in specific aspects and collect the realities of specific minorities that cannot be studied by means of a survey.

Secondary data

Administrative records or reports from services and programs of the municipal entity itself, for instance, can be used to cross-check the data from the survey or from possible qualitative studies.

Table 1.

Selection of strengths and weaknesses of representative surveys.

Strengths

Statistical representativeness. The samples are designed to analyze a specific population accurately.

Reliability of results and identification of trends or patterns.

Surveys that are well designed and deployed provide trustworthy results with which to identify meaningful trends and patterns in the population under study.

External validity. The results can be inferred in the studied population, beyond the participant sample.

Comparability. Comparisons can be made among different groups or segments of the population under study, also allowing for comparisons over time and in other geographic environments.

Structured information. Relevant information can be analytically compiled in a structured and standardized way.

Efficiency. Large-scale data compilation can be done with limited resources, as can the quantification of phenomena and the analysis of the association between variables. Specifically:

- It is possible to identify (quantify) the number of people with a certain behavior, attitude or opinion.
- It is possible to analyze the association of certain characteristics (socioeconomic and others) with the phenomenon being studied.

Table 1.

Selection of strengths and weaknesses of representative surveys.

Weaknesses

Response issues. Some people or specific groups can be reluctant to answer surveys or certain types of questions, which may create biases.

Exclusion of specific population groups. Some population groups may be left out, which affects sample representativeness. The main reason for this is often the difficulty of accessing these population segments, either because there are quantitatively few individuals or because the sampling process does not facilitate their location.

Sampling errors. The validity of the results can be compromised if there are large sampling errors, especially when analyzing results for small subsamples (for example, specific communities or at infra-municipal territory level).

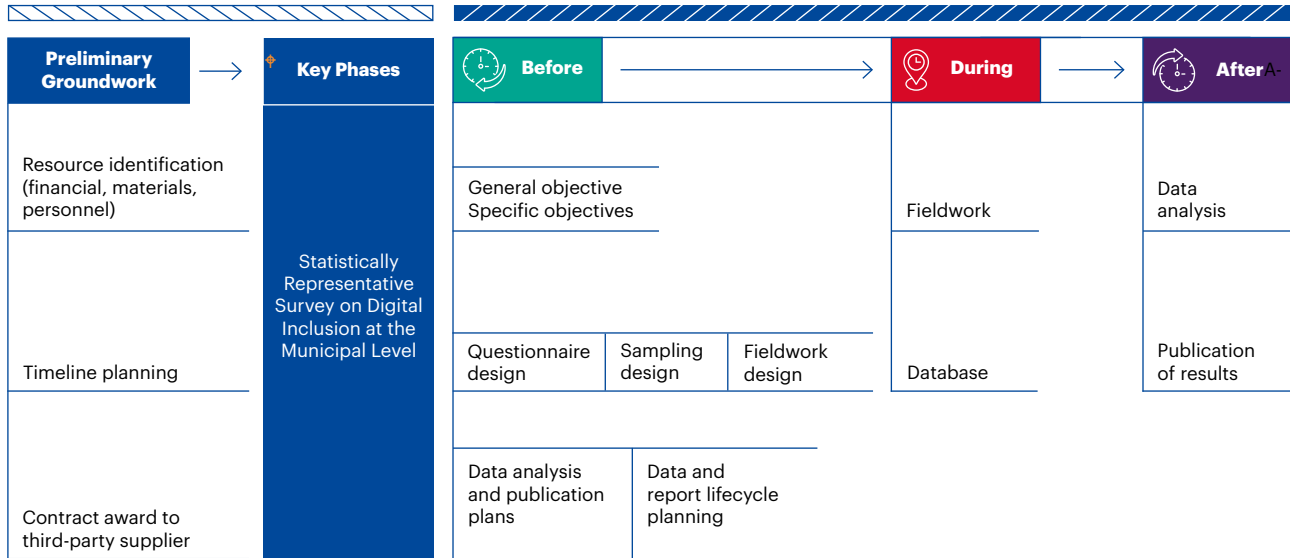
Preset approach. Questionnaires are rigid tools that focus on specific aspects and may overlook relevant nuances or details.

Phrasing of questions and answer options:

- The way questions are asked and the possible answers listed in the questionnaire may influence the respondent's answers and cause bias.
- Minor changes in the wording of questions and/or answer options may determine the comparability of the data with that of other sources or from previous surveys in the same municipality (if available).

Structure of this guide and survey

This practical guide has three main sections grouping the tasks that should optimally be carried out before, during and after the survey, as summarized in the figure below. The annexes contain relevant materials to access further information.





BEFORE

1

SURVEY CONCEPTUALIZATION AND DESIGN

- 1.1 Survey objective and other relevant items
- 1.2 Data analysis plan
- 1.3 Questionnaire design
- 1.4 Sampling design
- 1.5 Fieldwork design
- 1.6 Comparability
- 1.7 Survey outputs and their life cycle



1.1 Survey objective and other relevant items

An effective survey, one that produces valuable information for decision-making, must be guided by a clear objective, must compile relevant data to respond to said objective, and must consider available resources.

In this case, the main objective of the survey will be to assess the level of digital exclusion or inclusion in the population of a municipality. The local entity intending to develop the survey must also define specific objectives, which in turn will determine the final structure of the questionnaire.

To determine the most relevant items in the survey, we propose the following questions:

What type of information do city councils or local entities need in relation to digital inclusion?

For example, but not limited to:

Initial assessment of the digital divide in the municipality.

Overall assessment together with a specific assessment known from previous studies to be of special interest.



What purpose must the data serve?

It is crucial to identify clearly what the survey will be used for so as to design it effectively and obtain the most relevant information for the existing needs. For example, but not limited to:

Defining public policies to fight against the digital divide in specific groups.

Designing or redesigning public services (digital, in-person or phone channels) and digital public infrastructures.

What level of depth or detail is needed?

It is recommended to conduct analyses that consider, at least, age, place of origin, education level, employment status and income level variables, in order to obtain a correct assessment of the socio-digital divide. City councils or local entities must also determine whether it needs infra-municipal information, i.e., by district, neighborhood or other relevant territorial grouping.

Who will carry out the survey design, the fieldwork and the analysis?

It is necessary to clearly define who will be responsible for the design, data collection and analysis processes. The external entity responsible for data collection must be identified to ensure a statistically representative sample.

The assignment should be properly tailored to the competencies of the internal team, so that all phases of the questionnaire design and data analysis can be included, if necessary. In addition, standard procedures should be followed when assigning the contract to the selected third-party supplier.

Are there any specific digital inclusion issues of particular interest?

Beyond what is proposed in this practical guide, it is necessary to consider other specific objectives to determine if they should be analyzed using the survey, or if other methodologies would be more appropriate.

What is the desired data temporality?

Surveys are often designed as a one-time data collection. However, regardless of whether future resources can be allocated, it would be advisable to identify the minimum amount of information that would be useful to compare over time and the frequency with which data should be collected.

What are the available resources?

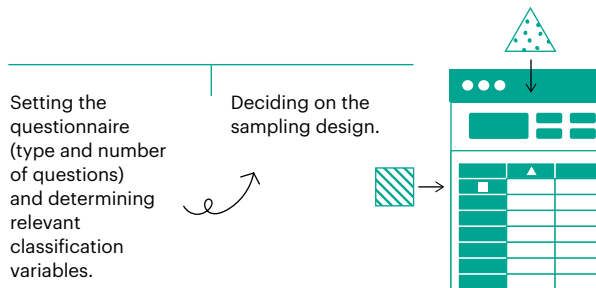
The available resources (financial, material and personnel) will determine both the level of depth and analysis of the data and the life cycle of the project (timeline). It is recommended to conduct a realistic assessment in order to optimize the resources.

1.2 Data analysis plan

The data analysis plan of a survey is crucial for interpreting the data. This plan establishes strategies, techniques and procedures to be followed in order to analyze the answers received from the survey.

A well-structured analysis plan is essential to obtain valid and relevant conclusions. It also provides a solid basis for the design of public initiatives and policies.

Determining the analysis plan before collecting the data serves to reach a higher degree of precision when:



The analysis plan is in dialogue with the questionnaire and sampling design, so each has a bearing on the other.

The analysis plan must ensure that the specific objectives of the survey are reached. In addition, it is essential to define the desired analyses so that, when determining specific survey questions, none is overlooked or unnecessary. Once the questionnaire has been drafted, it is advisable to establish:

Which variables will be compared and how.

The constructs to be generated (specific indicators of the digital divide or digital inclusion).

The most relevant classification variables to be analyzed.

As far as possible, it is advisable to determine in advance how the data should be channeled and what types of indicators you wish to create.

Selecting analysis methods is another important step in the analysis plan. It consists of determining which statistical methods or other analysis techniques will be used to process the data. Method selection will depend on what is agreed upon with the entity in charge of carrying out the survey or on the skills and time dedication of the team itself.

The **basic analysis** must include an overall description of the data via tables or graphs that summarize the entire questionnaire. These tables might include the percentage of the population that uses the Internet often or the main reasons for never using the Internet.

Additionally, *disaggregated results* should be given by socio-demographic variable (gender, age, educational level, income bracket, etc.) or, if applicable, at the neighborhood or district level. When the data are disaggregated, *hypothesis testing*² is often necessary to determine whether the results can be generalized to the municipality.

To complement this, and in stages subsequent to the basic analysis, statistical methods that analyze multiple variables as a whole provide a deeper understanding of the factors affecting the digital divide.

For example, they enable measuring how different sociodemographic factors collectively affect digital inequalities.

In turn, the analysis plan helps establish which reports can be produced (see Section 1.7). It is worth remembering that all these aspects are affected by the available budget allocation.

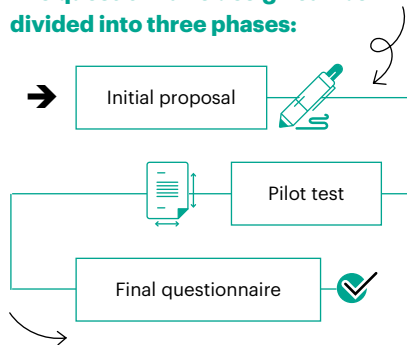
The analysis plan, defined at the start of the project, can be expanded or modified if any intermediate result makes it necessary and the available resources allow it.

² *Hypothesis testing* is a procedure to determine if a presumed feature of a population is compatible with what is observed in the available sample. For example, it can be used to assess whether internet use varies by age.

1.3 Questionnaire design

Crafting an effective questionnaire is essential for a successful survey. Among other things, a good design will consider the length, which should be limited, as well as the order and logic of the questions, which should flow appropriately. The entity in charge should aim the questionnaire design towards ensuring maximum efficacy.

The questionnaire design can be divided into three phases:



The **initial proposal** can be built using the questionnaire included in this practical guide (see Annex 1). The questionnaire is based on the following structure, the details of which should be adapted depending on the survey objectives (see Section 1.1) and the analysis plan (see Section 1.2):

- | | |
|--|--|
| <ul style="list-style-type: none"> 0. Classification filters, quotas and variables (questions that include non-essential classification variables are better suited to the end of the questionnaire). 1. Home: devices, internet connection and barriers 2. Individual: personal mobile device, connectivity and barriers | <ul style="list-style-type: none"> 3. Usage, usage frequency and barriers 4. Skills, digital competencies, and autonomy and confidence 5. Internet utilization and exclusion, subjective perceptions 6. Municipal services and infrastructures (optional) 7. Classification variables (those not included in Section 0) |
|--|--|

To illustrate other options, Annex B (see Table 3) includes information to access questionnaires from surveys on digitalization and socio-digital inequalities developed by the City Councils of Barcelona (2020), l'Hospitalet de Llobregat (2022) and Mataró (2022), and by the Ferrer i Guàrdia Foundation (2022).

Once the initial questionnaire has been defined, the entity in charge will carry out a **pilot test** in all languages in which the survey is to be conducted, but with a limited number of participants. This indispensable step enables validating the questionnaire and making minor adjustments. The result of this process will be the **final questionnaire**, which will guide the field work and will be shared once the results and the database are published.

1.4 Sampling design

Local administrations must decide on the population to be studied, which is also known as the target universe.

The target population (universe) is defined based on the survey objectives and the analysis plan. The sampling design itself is handled by the entity responsible for conducting the survey.

A probability sample is a subset of the population selected in such a way that each individual in that population has a known, non-zero probability of being included in the sample.

Selecting participants via random sampling techniques allows for making statistical inferences about the population based on features observed in the sample. This is to say, it makes it possible to generalize the results of the sample to the municipal population.

As the goal is to achieve statistically representative results, the design should consider different technical factors (acceptable *margin of error*,³ applicable quotas, sampling units, etc.).

³ The *margin of error* in statistics is an estimate of the extent to which the results of a survey may differ if the survey is repeated. The higher the margin of error, the less reliable the results, and the greater the likelihood of deviation from reality.

Specifically, *sampling quotas*⁴ should be established for at least two demographic parameters: gender and age. This will ensure a more accurate representation of the population. Quotas will be established in a way that replicates the demographic distribution of the municipal population. Therefore, this information must be as current as possible. The census or other municipal records are a useful source of information to establish quotas.

To ensure precise results, it is advisable to explicitly include in the analysis the characteristics of the sample ultimately used, including quotas. This will refine the conclusions drawn on the target population, which will directly influence the design of more effective public policies.

By way of example, these two aspects should be kept in mind when interpreting the data. Firstly, age. The survey analyzes the population aged 16 and older, with no upper age limit. On the one hand, in line with a fairly common approach, the survey design excludes children and young teenagers. If studying them were of interest, it would be necessary to use different tools adapted to the reality of these groups.

At the other end of the chronological age spectrum, we advise using at least two categories for older people (65–74 and 75 and older). Ideally, one should follow the same structure to establish age brackets as with the rest of the population, provided that the technical conditions of the survey allow it.

Secondly, the interpretation must consider if the people being interviewed are registered in the census or are usual residents (regardless of whether they are registered in the census or not), to assess which communities are included or excluded in the analysis.

⁴ The *sampling quotas* reproduce the distribution of the municipality's population along known key dimensions (gender, age, origin, etc.) that are relevant to the intended analysis of the data.

1.5 Fieldwork design

The key aspect of fieldwork design that must be defined is how data is collected. Everything else is handled by the entity conducting the survey.

Currently, online surveys are the most commonly used and economical option, though they are not advisable in some circumstances. In our case, given that the objective is to analyze digital inclusion and exclusion, it is necessary to conduct the survey over the phone or in person, so that those with limited or no digital competencies are not excluded (known as selection bias).

The questionnaire has been designed to be employed over the phone or in person. The data can only be collected by phone, or face-to-face interview or a combination of the two.

A **digital survey** can be used to supplement the other two methods but should be closely monitored to avoid any selection biases. The digital channel must never be the main option but should be used to ensure access to specific population quotas when they are not expected to be reachable by phone or in person.

Deciding on the channel or channels depends on the survey objectives and the available budget. In any case, it may be necessary to adapt the presentation or layout of the questions in the questionnaire and, if necessary, establish quotas for each channel.



1.6 Comparability

While it is not mandatory, ensuring a certain degree of comparability with other statistical sources helps contextualize the survey results.

Another potentially relevant factor when deploying the survey project is comparability with key **digital inequality indicators** that inform relevant public policies.

In this practical guide we suggest prioritizing compatibility with the municipality's own data, whether they predate the survey deployment or if the study is expected to be repeated in the future.

If they are previously collected data, adapting the key questions should be considered. Results can also be compared with those of other municipalities where the questionnaire proposed by this guide is implemented.

Given that the questionnaire has been conceived so that each local entity can adapt it to their needs and objectives, the set of variables for which comparability should ideally be ensured is defined in Table 2. The selection was made considering first, second and third level digital divide indicators.

In any event, a critical perspective is recommended to guarantee that efforts to ensure comparability are justified and add value to local decision-making. In this regard, it is important to consider what needs to be compared, how it should be compared and why.

Table 2.

Key concepts for comparability and corresponding questions.

Concept	Survey Question ⁵
Internet Access and Usage Frequency	
Internet usage / non-usage	Q12
Frequency of Internet usage	Q12
Digital Exclusion	
Reasons for not using the Internet or not using it more frequently	Q13
Reasons for not having an Internet connection at home	Q8
Reasons for not using key digital services more frequently: online banking, digital administrative processes, digital health, etc.	Q17
Perception of digital exclusion in the past year	Q23
Factors leading to the perception of digital exclusion	Q24
Self-perception of Digital Skills	
Digital competencies self-assessment	Q18
Confidence to face any digital challenge	Q21

⁵See Annex A

1.7 Survey outputs and their life cycle

Several outputs can be generated by the survey project, and it is advisable to define them when designing the survey. In addition to the results themselves, which are published as results reports, tables and infographics (data visualizations), it is also recommended to share the database, in order to contribute to open knowledge.

The objective is to plan the survey life cycle beyond the initial stages and up to its publication.

Specifically, it is necessary to specify what materials will be published, how they will be published, on what schedule and for how long, to ensure maximum publicity while applying realistic sustainability considerations, adapted to the material and economic resources available.

Among the documents that can be included in the publication plan are the following:



The initial report and, if available, **the secondary report or reports**

with more in-depth or focused analyses on specific topics. These reports should be aligned with the analysis plan (see Section 1.2).

The initial report should include the data sheet. Using infographics can be useful to reach broad, non-specialized audiences. It is also possible to create a website where specialized audiences, either internal or external to the city council, can make use of the results.



The questionnaire, which can be published separately or together with the initial report or the database.



The survey database in open access. It is advisable to share the anonymized data file (normally called a microdata file) in a format that is compatible and preferably associated with open-source software, so that third parties may analyze it.

It should be accompanied by the so-called metadata: the data dictionary (or list of variables, including technical details) and the data sheet. We also recommend including the questionnaire and the syntax that were used to create the initial report variables and indicators.



The assignment evaluation,

which is a document on the public policy proposals that informed the survey, and the analysis of visibility and use of the reports and dataset.

This contributes to the transparency of the public activity and can serve both to assess the action itself (project efficiency and efficacy, costs, etc.) and to guidelines of action and specific projects, as well as future studies (quantitative and qualitative) on the same subject.

Lastly, the following questions may be useful to determine the life cycle of the reports and other data:

- **Who is responsible for preparing** each output? Can the different products be generated internally, or do they have to be assigned to the entity in charge or other providers?
- **How and where** will each asset be **published**? Does content publication fall under the responsibility of the same unit that commissions the survey? What is the institutional policy in that regard and what aspects need to be considered?
- Is it necessary to **share the report and the data** beyond the unit that commissions it?⁶
- **What specific maintenance** will be needed for each product that is published? Is there any institutional repository, in-house or at other levels of government, with which the reports and the database can be shared in a sustainable way?
- Who is responsible for **publishing and maintenance resources** and **what timeline** can they commit to?

⁶ Information subject to transparency regulations (Article 8 Law 19/2014).



DURING

2

SURVEY FIELDWORK

- 2.1 Data collection and quality control
- 2.2 Database



2.1 Data collection and quality control

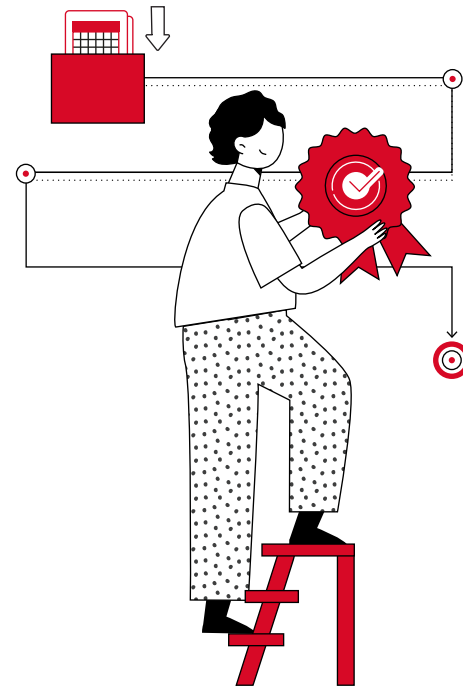
The tasks to be carried out during data collection are the responsibility of the entity carrying out the survey (see Annex 5). Smooth communication with that entity is encouraged to adequately monitor the process.

The operations adapt to the data collection channel or channels, as well as to the other technical elements defined in the fieldwork design (see Section 1.5).

During data collection, different aspects of the process are controlled to ensure the quality of the information obtained and, therefore, the accuracy of the results to come from the survey.

Quality control procedures differ based on the technical specifications of the project.

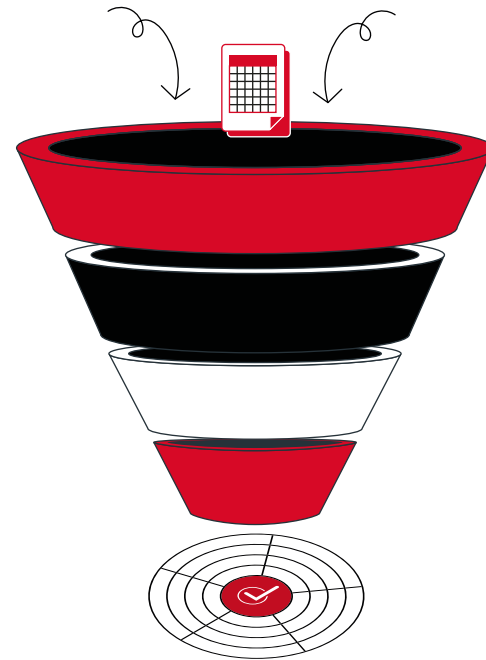
Once the timeline is set, the entity carries out the field work and quality control, reporting the task progress informing of any possible deviations from or substantial changes in relation to the initial plan.



2.2 Database

The database is cleaned and the variables are recoded as needed in order to conduct the initial analyses.

The entity carrying out the survey delivers the database in the agreed format along with the data sheet and the report or reports agreed on. When it is received, it is advisable to run a database consistency check.





AFTER

3

ANALYSIS AND PUBLICATION OF THE RESULTS

- 3.1 Data analysis
- 3.2 Publication of results, open data

3.1 Data analysis

It is recommended to follow the analysis plan (see Section 1.2) to obtain results that aid decision making as quickly as possible. The data analysis can have various complexity levels that will be reflected in the reports to be published (see Section 1.7).

Different analysis levels can be defined:

An **initial or basic exploitation** of the data is usually superficial. While it provides an initial overview of the local situation which makes it possible to contextualize the results in relation to the closest context, a deeper level of analytical value should be sought.

The assignment may include a **detailed descriptive analysis** according to classification variables (gender, age group, education level, etc.) and, in this case, the infra-municipal level (neighborhood, district or some other territorial grouping).

This *bivariate analysis*⁷ usually makes up the **survey results report**, which is the key publication of the project. Its purpose is to inform about public policy proposals. It is shared with the public through the local entity's usual communication channels. The results should be supplemented with the fieldwork data sheet.

More complex or in-depth analyses can be proposed in response to a previously identified need.

These analyses can be conducted by the local entity itself if it has in-house expertise, or, alternatively, the study can be outsourced.

⁷ A *bivariate analysis* crosses the various indicators and survey questions with each of the sociodemographic variables (gender, age, educational level, etc.) and applies hypothesis contrasts to infer results for the municipality's population as a whole. It makes it possible to explore how different survey variables relate to each other and how they vary depending on the sociodemographic specifications of the people participating. This helps identify trends, correlations and factors that may influence the phenomenon being considered, in this case, the digital divide.

Additionally, if the data are published in open access (see Section 3.2), other people or entities may develop studies that were not initially predicted in the analysis plan. These third parties would ideally:

- Analyze the data using their own research questions.
- Share their results and conclusions with the local entity.

3.2 Publication of results, open data

The publication of results should follow the plan made at the start of the project (see Section 1.7).

One option for sharing databases is using the open data repository of the local entity (if available) or of the Government of Catalonia managed by the Open Administration Consortium of Catalonia ([AOC Portal](#)), as has already been done by the City Council of l'Hospitalet de Llobregat with the [Digital Divide Survey 2022](#).

As soon as the data are openly available, it is advisable to make both the report and the database available to wide audiences to encourage unplanned analysis and reuse of the data. Whoever reuses the data is encouraged to make the results available to the those who originally carried out the survey.





ADDITIONAL CONTENT

4

- Some survey examples
- Final considerations and future actions
- References and relevant resources
- Acknowledgments and co-design team



Some survey examples

Developing surveys on the digital divide has been essential in inspiring public administrations to drive various policies and projects at different levels. The data obtained has been used to identify specific needs and carry out actions that address socio-digital inequalities. Some of the initiatives that have been launched as a result of these efforts follow:

L'Hospitalet de Llobregat

Based on the survey carried out in 2022, the **City Council of L'Hospitalet de Llobregat** has developed a series of initiatives that bring connectivity closer to digitally excluded communities in a flexible way, taking into account the relevance of digital mediation:

- [Implementation of a TIC Truck \(ICT Truck\) providing digital support and training for citizens](#)
- [L'Hospitalet will have ICT spots in municipal markets](#)
- [L'Hospitalet launches a new model for citizen support, including an assisted support area.](#)

Mataró

In the case of the **Mataró City Council**, the survey on local use and knowledge of information and communications technologies (ICT) is part of the [Wireless Mataró initiative](#), which seeks to establish an open telecommunications network that is free, neutral and offers equal conditions for all citizens.

The survey was conducted in 2022 with the objective of providing detailed information on access, competencies and usage gaps among the population of Mataró, in order to tackle the digital divide – a divide that is particularly noticeable in certain municipal areas, and among specific personal and family profiles.

Furthermore, the results obtained were used to enhance the ICT training program offered to the population by the Education Department of the City Council. The following resources help understand the project and its relationship with the survey:

- [City Council, TecnoCampus and the Guifi.net Foundation develop the “Wireless Mataró” project](#)
- [Mataró promotes an open telecommunications network with “equal conditions for all citizens”](#)

Barcelona

In the city of Barcelona, responding to the need to assess the minimum digital competencies to access or remain in the labor market, **Barcelona Activa**, the local development agency of the **Barcelona City Council**, provides citizens with a digital skills test to identify possible courses and training to recommend:

- [What are your digital skills?](#)
- [Activate your digital skills!](#)

Catalonia

Lastly, the [Shock Plan Against the Digital Divide](#) by the **Department of Business and Labour** of the **Government of Catalonia** places special emphasis on the provision of infrastructure, with the expansion of broadband access in areas where there is still no coverage, and on training.

Specifically, it aims to provide training in basic competencies to over 90,000 people who are at risk of digital exclusion. To find those communities, it used a statistical data study already available at the regional Catalan and local levels, [Digital Divide Study by KPMG](#).

Final considerations and future actions



This practical guide aims to help in the development of surveys that can be used by public administrations and other local entities to establish the assessment and design of actions and initiatives in the field of digital policies at the municipal level. This initiative is in line with the United Nations 2030 Sustainable Development Goals, especially SDG 10 on Reducing Inequalities.



Being able to design public policies based on empirical evidence is crucial to effectively address inequalities in the access and use of digital technologies. This data-based approach allows for more informed decision making, ensuring that the policies being developed accurately match the real needs of the community.



Additionally, it is important to highlight the importance of co-design with knowledgeable parties in the field. The involvement of public institutions, the third sector and companies with recent experience ensures that this guide is adapted accurately and is up to date with the complexity of specific municipal challenges. This collaboration has made it possible to identify relevant issues and define meaningful indicators to measure digital inclusion/exclusion comprehensively.



Lastly, the flexibility and adaptability of the guide to each specific case are key factors. Although an example questionnaire is provided, the objective is far from imposing a specific way of conducting the survey; it is only intended to offer a guide for action. As local realities are diverse, the questionnaire should be adapted to the particular conditions of each setting to ensure its usefulness and efficacy in identifying barriers and opportunities in relation to digital inclusion/exclusion.

Overall, this guide aims to be valuable to local governments by providing a systematic framework for addressing the digital divide. It encourages an approach that is informed, participatory and tailored to diverse municipal contexts. We recommend supplementing this framework with additional data and studies over time, as opportunities arise.

This practical guide was created with the aim of being a living, useful tool for local public administrations interested in developing studies on the phenomenon of the digital divide, to better understand the situation in their municipality and implement strategies and actions to alleviate it.

The intention is to further raise awareness of the need for tools and strategies that make it possible to assess the phenomenon and establish consensus on the indicators for measuring the digital divide, so as to unify criteria, promote comparability and the use of open data, and foster communication and alliances between local actors in the study of the digital divide in the Catalan and national frameworks.

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Acknowledgments

An initiative of the

Mobile World Capital Foundation

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ANNEXES

5

- Annex A
- Annex B
- Annex C



Annex A

Questionnaire about digital inclusion at the municipal level, generic survey template

0. Classification Filters, Quotas and Variables

Q 1. Do you normally live in _____ / have you lived in _____ for the past year / have you been registered in the census for the past year in _____

(name of the municipality or geographic area of interest)?

1. Yes
2. No [go to: End of the interview]
99. (Do not read) N/A [Go to: End of the interview]⁸

Note: If you wish to include in the questionnaire Section 7, Municipal Services and Infrastructures, we advise changing the question “Do you normally live in _____” to “Have you lived in _____ for the past year” or “Have you been registered in the census for the past year in _____”.

Q 2. What is your neighborhood/district of residence?

(Single response.)

1. 1., 2., 3., etc. (Neighborhood list.)
99. (Do not read) N/A

Note: Quotas for each neighborhood/district can be established if you wish to systematize an infra-municipal analysis, which may also favor comparisons among municipalities. Sample size and design must meet these conditions.

Q 3. What is your gender?

(Ask the question explicitly.)

1. Male
2. Female
3. Other (non-binary, etc.)
99. (Do not read) N/A

[Do not include option 99 if the question is intended to establish quotas.]

Note: It is customary to establish quotas by gender. In such a case, 2 categories are often used (“Male” and “Female”). If you choose to use 3 categories, it may be advisable for later, in the analysis stage, to aggregate categories 2 (“Female”) and 3 (“Other”), as the number of cases for the latter is usually too low to use standard statistical tools.

Q 4. What is your age?

(Write exact age and codify.)

1. 16-24 years old
2. 25-34 years old
3. 35-44 years old
4. 45-54 years old
5. 55-64 years old
6. 65-74 years old
7. 75-84 years old
8. 85 years old or older
99. (Do not read) N/A

[Do not include option 99 if the question is intended to establish quotas.]

⁸ The coding of the answers in the questionnaire is arbitrary and can therefore be modified.

Note: Age is a key variable, and to establish the quotas that determine the sample composition it may be advisable to establish 3 or 4 categories, instead of 8. If feasible, it is recommended to incorporate age in the analysis in 10-year cohorts. It is recommended to avoid a maximum age limit, and to allow ages of 100 years or above (currently the limit can be set at 120 years). Categories 7 and 8 can be added if the number of sample observations is technically limited.

Q 5. What is your citizenship?

1. Spanish
2. Other
3. Both Spanish and another
99. (Do not read) N/A

[Do not include option 99 if the question is intended to establish quotas.]

Note: Complementing Q5 (citizenship) with Q32 (place of birth) helps identify migration cases more precisely. Quotas are usually designed using the administrative variable of citizenship, though they can also be established by place of birth.

1. Home: Devices, Internet Connection and Barriers

Q 6. Which of the following equipment items do you have at home?

(Multiple responses unless the answer is 98 or 99.)

1. Household internet connection: fiber-optic, ADSL, or another type of connection (USB modem, mobile data, satellite, etc.)
2. Internet connection via cellular data plan
3. Landline or cellphone with no internet or for calls only
4. Intelligent cellphone (smartphone)
5. Tablet
6. Laptop
7. Desktop computer
8. Smart TV
9. Gaming console with an internet connection
10. Virtual Assistant (Alexa, Google Home, etc.)
98. (Do not read) DK
99. (Do not read) N/A

Q (Basis: You have an internet connection at home [Q6 = 1].)

7. Rate the quality of your connection at home on a scale of 0 to 10, where 0 is “Very bad” and 10 is “Very good”.

Very good									
0	1	2	3	4	5	6	7	8	9

Very bad	DK	N/A
10	98	99

Q (Basis: You do not have an internet connection at home [Q6.1 = No].)

8. What are the reasons you do not have an internet connection at home?

(Spontaneous response. Multiple responses unless the answer is 98 or 99.) (Specify and codify by category)

1. Financial reasons (cannot afford the connection / the devices)
2. Technical reasons (faulty connection, bad quality fiber optics, unsuitable devices)

3. Lack of skills (do not know how to use the Internet)
4. Lack of motivation/interest (not interested / do not need internet)
5. Disability
6. For ethical, privacy, security or ideological reasons (do not want to share my data / for digital hygiene / I choose to limit digital usage)
7. Alternatives (do not need a connection at home, can connect in other ways)
95. Other
98. (Do not read) DK
99. (Do not read) N/A

2. Individual: Personal Mobile Device, Connectivity and Barriers

Q 9. Do you, personally, own a smartphone/intelligent cellphone/cellphone with an internet connection?

1. Yes
2. No
99. (Do not read) N/A

Q (Basis: You own a smartphone with an internet connection [Q9 = 1].) **10. Do you restrict your use of mobile data or have to be economical with mobile data usage?**

1. Yes
2. No
3. (Do not read) N/A

Q (Basis: You restrict your use of mobile data [Q9 = 1 and Q10 = 1].) **11. Why do you have to be economical with mobile data usage?**

(Spontaneous response. Multiple responses unless 98 or 99 are chosen.)
(Specify and codify by category)

1. Financial reasons (cannot afford the devices or the connection)
2. Technical reasons (my phone does not support the connection, or only allows a bad connection)
3. Lack of skills (do not know how to use the Internet)
4. Lack of motivation/interest (not interested / do not need data on my phone)
5. Disability
6. For ethical, privacy, security or ideological reasons (do not want to share my data / for digital hygiene / I choose to limit digital usage)
7. Alternatives (I connect in other ways)
95. Other
98. (Do not read) DK
99. (Do not read) N/A

3. Usage, Usage Frequency and Barriers

Q 12. How frequently do you normally use the Internet?

1. Daily
2. A few times per week
3. A few times per month
4. A few times per year (sporadically)
5. Never (ask the person if they use WhatsApp, Facebook, Google, Movistar TV, Netflix or similar)
98. (Do not read) DK
99. (Do not read) N/A

Q (Basis: You use the Internet, at most, a few times per year [Q12 = 4 or 5].)

13. Why do you not use the Internet more frequently?

(Spontaneous response. Multiple responses unless the answer is 98 or 99.)
(Specify and codify by category)

1. Financial reasons
2. Technical reasons (faulty connection, bad quality fiber optics, unsuitable devices)
3. Lack of skills (do not know how to use the Internet)
4. Motivation/interest (not interested / do not need internet)
5. Disability
6. For ethical, privacy, security or ideological reasons (do not want to share my data / for digital hygiene / I choose to limit digital usage)
7. Alternatives (someone does it for me, I am not in charge)
95. Other
98. (Do not read) DK
99. (Do not read) N/A

Q (Basis: You use the Internet, at least, a few times per month [Q12 = 1, 2 or 3].)

14. Which of the following statements do you most identify with?

(Single response.)

1. I use the Internet whenever I need to and wherever I need to
2. I would like to use the Internet more often, but there are limitations that prevent me from doing so
98. (Do not read) DK
99. (Do not read) N/A

Q (Basis: You use the Internet, at least, a few times per month [Q12 = 1, 2 or 3].)

15. Which of the following situations do you most identify with?

(Single response.)

1. Generally, I need help to use the Internet
2. Generally, I do not need help, but I would not be able to help someone else to use the Internet
3. Generally, I can help other people to use the Internet
98. (Do not read) DK
99. (Do not read) N/A

Q (Basis: You use the Internet, at least, a few times per month [Q12 = 1, 2 or 3].)

16. How frequently do you perform the following activities over the Internet?

(Rotate the items.) (Specify and codify by category)

Daily

1. A few times per week
2. A few times per month
3. A few times per year (sporadically)
4. Never
98. (Do not read) DK
99. (Do not read) N/A

	1	2	3	4	5	98	99
Q16.1. Using email							
Q16.2. Sending messages on WhatsApp, Telegram, etc.							
Q16.3. Making video calls via the Internet (on Zoom, Skype, WhatsApp, etc.)							
Q16.4. Using social media							
Q16.5. Playing online video games or games of chance or gambling online							
Q16.6. Checking the news on specific websites or searching for practical information (news sites, encyclopedias, trips, tickets, etc.)							
Q16.7. Buying any type of product or service online							
Q16.8. Selling products online (e.g., on Wallapop)							
Q16.9. Consuming paid audiovisual content online, related to culture, sports or entertainment (such as Netflix)							
Q16.10. Consuming free audiovisual content online, related to culture, sports or entertainment (such as YouTube)							
Q16.11. Carrying out banking transactions online (including Bizum)							
Q16.12. Carrying out public administration procedures online							
Q16.13. Booking a medical appointment or carrying out a medical visit online							
Q16.14. Writing and presenting class assignments, or working with other students online (e.g., on Google Class)							
Q16.15. Using collaborative work platforms and/or intranet							



Q (Basis: You perform activities online, at least, a few times per year (sporadically) [Q16.11 or Q16.12 or Q16.13 = 4 or 5].) **17.**

Why do you not perform the following activities more frequently?

(Spontaneous response. Multiple responses unless the answer is 98 or 99.)

1. Lack of skills (do not know how)
2. Motivation reasons (not interested / do not like it)
3. Financial reasons
4. Technical reasons (lack the connection or the devices)
5. Disability
6. I have alternatives (someone does it for me, I am not in charge)
7. It goes against my values
8. Due to personal data use and security
9. I perform activities online as often as I need to
95. Other
98. (Do not read) DK
99. (Do not read) N/A

	1 2 3 4 5 6 7 8 9 98 99
Q17.11. Carrying out banking transactions online (including Bizum)	
Q17.12. Carrying out public administration operations online	
Q17.13. Booking a medical appointment or carrying out a medical visit online	

4. Skills, Digital Competencies and Autonomy and Confidence

Digital competencies are the sum of knowledge, abilities, skills and attitudes that enable adequate use of digital tools.

Q 18. Rate the level of your digital competencies on a scale of 0 to 10, where 0 is “Very low” and 10 is “Very high”. (See: for example, using a computer or a mobile phone)

Very low									
0	1	2	3	4	5	6	7	8	9

Very high	DK	N/A
10	98	99



Q 19. When you have any computer/ internet related difficulties, what do you usually do?

(Single response.)

1. I try to resolve it on my own, even if by searching how to do it (via forums, video tutorials, etc.)
 2. I reach out to friends, family or work colleagues
 3. I reach out to public or third sector professionals (Punt TIC, Òmnia, associations, etc.)
 4. I reach out to private sector professionals (service bureau, mobile store, etc.)
 95. Other
 98. (Do not read) DK
 99. (Do not read) N/A
3. Protecting your computer from viruses or other malware
 4. Improving the performance of electronic devices
 5. Changing some parameters in the electronic device configuration, such as text size, screen brightness or language
 6. Installing programs or applications on electronic devices
 7. Publishing content online (on social media, websites, blogs, etc.)
 8. Managing data privacy on the Internet (e.g., private browsing or managing cookies)
 9. Signing with an electronic certificate, electronic ID or equivalent
 99. (Do not read) N/A

Q 20. For the following digital tasks, in which cases do you feel you have sufficient knowledge to complete them?

(Rotate the items.) (Multiple responses unless the answer is 98 or 99.)

1. Communicating with family, friends, colleagues, etc. over the Internet
2. Carrying out digital operations with public administration, the bank or the doctor

Q 21. Rate, on a scale of 0 to 10, where 0 is “completely disagree” and 10 is “completely agree”, your level of agreement with the following statement: “I feel confident in facing any digital challenge that may arise.”

Completely disagree

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Completely agree

10	98	99
----	----	----

NS

NC

98

99

5. Internet Utilization and Exclusion, Subjective Perceptions

Q 22. In the past year, in which of the following areas have you benefited or managed to be more effective, productive or efficient thanks to digital tools?

(Multiple responses unless the answer is 98 or 99.)

1. Personal social relationships
2. Entertainment or personal interests
3. Work
4. Studies
5. Procedures in administration, banking, health, taxes, etc.
6. Available information or resources
7. Content creation (text, image, video) to share experiences or opinions
8. Purchase, sale or rental of products or services
9. (Do not read) None of these areas
10. (Do not read) DK
11. (Do not read) N/A

Q 23. Over the past year, how often have you experienced feelings of exclusion due to your inability or unwillingness to utilize technology or digital devices?

1. Constantly
2. Very frequently
3. Occasionally
4. Infrequently
5. Never
6. (Do not read) DK
7. (Do not read) N/A

(Alternate question phrasing: At any time over the past year have you felt that you could not participate in an activity due to not using digital tools or the Internet, because you were either unable or unwilling to use them?)

Q (Basis: You have felt excluded in this way, at least, with some degree of frequency [Q23 = 1, 2, 3 or 4].) **24. What factors have led to your exclusion?** (Multiple responses unless the answer is 98 or 99.)

1. Lack of devices or equipment
2. Lack of connection/coverage

3. Lack of devices or services with a universal design (that do not accommodate my disability or functional diversity)
4. Lack of knowledge
5. Lack of confidence in my competencies
6. Lack of a person who could help me
7. Lack of motivation or interest in using digital technologies
8. Privacy or ideological reasons for which I refuse to use some form of technology
98. (Do not read) DK
99. (Do not read) N/A

Q (Basis: You have never felt excluded in this way [Q23 = 5].) **25. What are the key factors that have allowed you to avoid feeling digitally excluded?**

(Multiple responses unless the answer is 98 or 99.)

1. Having suitable devices or equipment
2. Having connection/coverage
3. Having devices or services with a universal design (that accommodate my disability or functional diversity)

4. Having knowledge
5. Having confidence in my competencies
6. Having a person who could help me
7. Being motivated or interested in using digital technologies
8. Other
98. (Do not read) DK
99. (Do not read) N/A

(Alternate question phrasing: Have you ever felt forced to use digital tools to participate in, carry out or develop any activity, when you would have preferred to do so in person or over the phone?

6. Classification Variables

Lastly, we would like to ask you some questions about your personal and family life.

Q 26. What is your main occupation? (Single response.)

1. Work (either self-employed or employed by others)
2. Unemployed
3. Retiree or pensioner
4. Unpaid work (including housework)
5. Student
6. Other
99. (Do not read) N/A

Q 27. What is your highest level of completed education? (Single response.) (Specify and codify by category. Ask for clarification, if necessary.)

1. Unschooled
2. Elementary education (primary school)
3. Compulsory secondary education (middle school or lower vocational training, etc.)
4. Higher secondary education (high school, baccalaureate, higher vocational training, specialization courses, university orientation courses, etc.)

5. University studies (diplomas, bachelor's degree, engineering degree, master's degree, etc.)
99. Do not read) N/A

Note: For general analyses, it is recommended to use three categories: low (1, 2 or 3), medium (4 or 5) and high (6) educational level.

Q 28. Do you have any functional diversity (hearing, visual or other) that makes it difficult for you to access the Internet?

1. Yes
2. No
99. (Do not read) N/A

Q 29. Of the following living situations, which best describes your home? (Single response.)

1. Single person
2. Couple
3. Couple with children
4. Single parent with children
5. Couple or single parent with children and other family members
6. Other
99. (Do not read) N/A

Q 30. The average household income in Catalonia is €3,000 per month after taxes (net income).⁹ Where on this scale would you place your household?

1. Well above average
2. Slightly above average
3. About average
4. Slightly below average
5. Well below average
98. (Do not read) DK
99. (Do not read) N/A

Note: The reference value for average monthly net income will have to be updated. Alternatively, municipal net income can be used if data are available.

Q 31. How easily do you usually make ends meet in your household?

1. With great difficulty
2. With difficulty
3. With certain difficulty
4. With certain ease
5. With ease
6. With great ease

7. (Do not read) DK
8. (Do not read) N/A

Q 32. Where were you born?

(Specify and codify. Reconfirm the region if the answer is not clear.)

1. In Catalonia or Spain
2. In another country of the European Union
3. In another European country (not in the European Union)
4. In Latin America
5. In an American country (not in Latin America)
6. In Africa
7. In Asia
8. In Oceania
99. (Do not read) N/A

Note: See note in Q5. Additionally, this question could be supplemented with that of the parents' birthplace, in order to identify first and second generation migration dynamics.

Thank you very much for your collaboration!

⁹ Average annual net income has been broken down on a monthly basis to facilitate interpretation. The latest available data is for 2022. Source: Idescat.

7. [Optional] Municipal Services and Infrastructures

If considered relevant, a specific module may be included to analyze the assessment or degree of knowledge of certain municipal actions, services or infrastructures. In this case, the information collected should be part of the objectives and analysis plan.

Given the diversity of interests and cases in local entities, this practical guide does not propose a specific set of questions to assess local digital services and infrastructures. As a reference, we highlight the main topics covered by the municipal surveys analyzed for the creation of the guide.

- Spaces where municipal Wi-Fi is available, its usage, usage frequency and assessment.
- Knowledge, usage, usage frequency and assessment of municipal digital services. Reasons not to use them.
- Knowledge, usage, usage frequency and assessment of digital processes with City Council. Ease of use. Reasons not to use them.

The specific phrasing of the questions and the structure of the corresponding sections can be found in the surveys included in Table 3 of Annex B.

Finally, it is recommended to keep in mind the following practical aspects, if this module is included:

- It is advisable for the population under study to have lived in the municipality for a minimum period of 12 months. It may also be preferable to use the census registration criterion instead of usual residence. Question Q1 should be made in accordance with these requirements.
- It is advisable to always conclude the questionnaire with the classification questions.
- To avoid an excessively long survey, you may wish to consider removing questions from another section.

Annex B

Other questionnaires

The table below provides links to the questionnaires that served as the basis for designing the generic survey template in Annex 1.

Table 3. Examples of questionnaires on digital inclusion/exclusion, in chronological order of survey implementation.

Study	Any
Survey on the digital divide in the city of Barcelona	2020
Survey on the digital divide in l'Hospitalet de Llobregat	2022
Survey on the digital divide in Mataró	2022
Survey on the digital divide in Spain (Ferrerer i Guardia Foundation) Available upon request: fundacio@ferrerguardia.org	2022

(Accessed: 06-03-2024)

Examples of indicators

Table 4: Examples of indicators and corresponding questions

Concept	Survey Question ¹⁰
<p>Internet Usage</p> <p>Regular user: connects at least once a month.</p> <p>Non-user: never connects or, if they do connect, only sporadically (a few times a year).</p>	Q12
<p>Digital inclusion/exclusion</p> <p>Digital exclusion: perceives digital exclusion constantly, very frequently, or occasionally.</p> <p>Digital Inclusion: perceives digital exclusion infrequently or never.</p>	Q23

¹⁰ See Annex A.

Subcontracting of the survey

The creation of the survey can be contracted by means of a minor contract or through a bidding process. While the purpose of this practical guide is not to provide contracting tools, samples of three related documents can be found in the table below.

Table 5: Sample Documents Related to Survey Contracting.

Technical specifications
Specific technical clauses
Justification of need report

(Accessed: 28-03-2024)

Annex C

Market and public opinion research companies

We suggest subcontracting a market and public opinion research company to conduct the survey. There are more than 250 of them in Spain. When making a selection, we recommend considering two aspects:

→ Firstly, the company should be certified in accordance with ISO 20252 (Market, opinion and social research, including insights and data analytics). This certification ensures the use of internationally agreed quality standards in all phases of the research process.

→ Secondly, it should be an entity or company included in category L 03 Services for conducting surveys, data collection and similar services of the Business Classification of the Ministry of Finance and Civil Service. This classification guarantees the economic and technical solvency of the bidding companies in works and services contracts.

Lastly, it may also be useful to review which providers have worked with entities that have conducted studies on the digital divide, such as those mentioned in Table 3 of Annex B.



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