

Describe activities, outcomes, impacts and context

This cluster of evaluation tasks involves collecting or retrieving data and analyzing it to answer evaluation questions about what has happened - activities, outcomes and impacts - and also important contextual information.

Sample

Sampling is the process of selecting units (e.g., people, organizations, time periods) from a population of interest, studying these in greater detail and then drawing conclusions about the larger population to study them in greater detail.

Methods

Consider why you want to study your population of interest and what you want to do with the information that you have gathered, before you choose your method.

There are three clusters of sampling options: Probability; Purposive (or Purposeful); and Convenience.

Probability

Probability sampling methods use random or quasi-random methods to select the sample, and then use statistical generalization to draw inferences about that population. To minimize bias, these methods have specific rules on selection of the sampling frame, size of the sample, and managing variation within the sample. The methods include:

- [Multi-stage](#): cluster sampling in which larger clusters are further subdivided into smaller, more targeted groupings for the purposes of surveying.
- [Sequential](#): selecting every nth case from a list (e.g. every 10th client)
- [Simple random](#): drawing a sample from the population completely at random.
- [Stratified random](#): splitting the population into strata (sections or segments) in order to ensure distinct categories are adequately represented before selecting a random sample from each.

Purposive (or Purposeful)

Purposive sampling methods study information-rich cases from a given population to make analytical inferences about the population. Units are selected based on one or more predetermined characteristics and the sample size can be as small as one ($n=1$). To minimize bias, this cluster of methods encourages transparency in case selection, triangulation, and seeking out of disconfirming evidence. The methods are:

- [Confirming and disconfirming](#): cases that match existing patterns (to explore them) and those that don't match (to test them).
- [Criterion](#): cases that meet a particular condition
- [Critical case](#): a case of particular importance, or that can make a strong point
- [Homogenous](#): cases that are very similar to each other.
- [Intensity](#): selecting cases which exhibit a particular phenomenon intensely.
- [Maximum variation](#): contains cases that are as different from each other as possible.

- [Outlier](#): analysing cases that are unusual or special in some way, such as outstanding successes or notable failures.
- [Snowball](#): asking initial informants to identify additional informants, creating a snowball effect as the sample gets bigger and bigger
- [Theory-based](#): selecting cases according to the extent to which they represent a particular theoretical construct.
- [Typical case](#): developing a profile of what is agreed as average, or normal.

Convenience

Convenience sampling is a cluster of methods that use samples which are readily available and which may not allow credible inference about the population. Convenience methods are:

- [Convenience](#): based on the ease or "convenience" of gaining access to a sample. simply in which data is gathered from people who are readily available.
- [Volunteer](#): sampling by simply asking for volunteers

Resources

Probability

- [Probability sample](#)

This entry from the Encyclopedia of Survey Research Methods provides a detailed overview of probability sampling and the different kinds of designs that can be used for gathering data for this method.

Purposive

- [Qualitative research & evaluation methods: integrating theory and practice](#)

The fourth edition of Michael Quinn Patton's *Qualitative Research & Evaluation Methods Integrating Theory and Practice*, published by Sage Publications, analyses and provides clear guidance and advice for using a range of different qualitative method

- [Purposive sampling](#)

This entry from the Encyclopedia of Survey Research Methods provides a detailed overview of purposive sampling and how it can be used in evaluation. (Academic subscription needed to access).

Use measures, indicators or metrics

As part of an evaluation, it is often important to either develop or use existing indicators or measures of implementation and/or results.

Using an existing indicator or measure can have the advantage of producing robust data which can be compared to other studies, as long as it is appropriate.

Considerable work has been done to develop measures and indicators that can be used for the outcomes of development projects.

The terms “measure”, “metric” and indicator” are often used interchangeably and their definitions vary across different documents and organisations. Hence, it is always useful to check what these terms mean in specific contexts.

Terms that are commonly associated with measurements include:

- A **target** is the value of an indicator expected to be achieved at a specified point in time. Often a **benchmark** is used to mean the same thing.
- An **index** is a set of related indicators which intend to provide a means for meaningful and systematic comparisons of performance across programmes that are similar in content and/or have the same goals and objectives.
- A **standard** is a set of related indicators, benchmarks or indices which provide socially meaningful information regarding performance.

Resources

Advocacy

- [Outcomes and performance indicators: Advocacy program](#)

This set of outcome indicators, developed by the Urban Institute, is aimed at supporting the development, monitoring and evaluation of advocacy programs.

Education and Training

- [Outcomes and performance indicators: Youth tutoring program](#)

This set of outcome indicators, developed by the Urban Institute, is aimed at supporting the development, monitoring and evaluation of youth tutoring programs.

- [Outcomes and performance indicators: Youth mentoring program](#)

This set of outcome indicators, developed by the Urban Institute, is aimed at supporting the development, monitoring and evaluation of youth mentoring programs.

- [Outcomes and performance indicators: Employment training/workforce development program](#)

This set of outcome indicators, developed by the Urban Institute, is aimed at supporting the development, monitoring and evaluation of Employment Training/Workforce Development Programs.

Governance

- [Worldwide Governance Indicators](#)

Reports aggregate and individual governance indicators for over 200 countries and territories over the period 1996–2020. (World Bank)

- [The Ibrahim Index](#)

Provides a framework and tools that were developed in order to assess the delivery of public goods and services in Africa. (Mo Ibrahim Foundation)

- [Data.Gov Open data](#)

Allows users to interactively access and compare data for governance issues from around the world.

- [IADB: Numbers for development](#)

Explore a snapshot of key development indicators for a country related to its macroeconomic profile, global integration, and social outlook. (IADB)

Health

- [Outcomes and performance indicators: Health risk reduction program](#)

This set of outcome indicators, developed by the Urban Institute, is aimed at supporting the development, monitoring and evaluation of Health Risk Reduction Programs.

Inequality

- [Policy impacts on inequality: Simple inequality measures](#)

This module from the Food and Agriculture Organization of the United Nations (FAO) demonstrates a range of ways to measure inequality by using the statistical concepts of location, shape and variability.

Poverty

- [Handbook on poverty and inequality](#)

This book from the World Bank provides a range of tools which allow the user to measure, describe, monitor, evaluate, and analyze poverty.

- [Multidimensional Poverty Index](#)

Aims to capture the multiple aspects that constitute poverty. (Oxford Poverty & Human Development Initiative)

Welfare

- [Outcomes and performance indicators: Transitional housing program](#)

This set of outcome indicators, developed by the Urban Institute, is aimed at supporting the development, monitoring and evaluation of Transitional Housing Programs.

- [Outcomes and performance indicators: Prisoner re-entry program](#)

This set of outcome indicators, developed by the Urban Institute, is aimed at supporting the development, monitoring and evaluation of Prisoner Re-entry Programs.

- [Outcomes and performance indicators: Emergency shelter program](#)

This set of outcome indicators, developed by the Urban Institute, is aimed at supporting the development, monitoring and evaluation of Emergency Shelter Programs.

Wellbeing

- [California county scorecard of children's well-being](#)

This website from Children Now provides an interactive display of statistics reporting on the wellbeing of children in California.

It uses 38 indicators to rank child well-being in each of California's 58 Counties.

World peace

- [Global peace index](#)

The Global Peace Index, an initiative of Institute for Economics and Peace (IEP), provides a ranking for each nation in regards to their peacefulness.

Collect and/ or retrieve data

This task focuses on ways to collect and/or retrieve data about activities, results, context and other factors.

It is important to consider the type of information you want to gather from your participants and the ways you will analyse that information, before you choose your method. You should also consider triangulating your methods in order to ensure multiple data sources and perspectives.

Methods

- The data collection tasks have been organised into five clusters based on the source of the data.
 1. Information from individuals
 2. Information from groups

3. Observation
4. Physical measurements
5. Reviewing existing records and data

Before choosing methods and collecting data it is essential to consider your key evaluation questions (KEQs) and the type of information you require to address these questions. You also need to consider the context of the evaluation and ensure the methods you choose are suitable and fit for purpose.

1. Information from individuals

- [Deliberative opinion polls](#)

The purpose of Deliberative Opinion Polls (DOPs) is to measure informed opinion on a particular issue.

- [Logs and diaries](#)

Logs, journals and diaries are monitoring tools for recording data over a long period of time.

- [Goal Attainment Scales](#)

Goal Attainment Scaling (GAS) is a method that can be used as a means of measuring outcome data from different contexts set out on a 5 point scale of -2 to +2.

- [Hierarchical card sorting](#)

Hierarchical card sorting (HCS) is a participatory card sorting method designed to provide insight into how people categorise and rank different phenomena.

- [Interviews](#)

Interviews are conversations between an investigator (interviewer) and a respondent ('interviewees', 'informants' or 'sources') in which questions are asked in order to obtain information.

- [Convergent interviewing](#)

A convergent interview is a type of interview intended to explore issues widely through a combination of unstructured interviews and a maximum diversity sample.

- [In-depth interviews](#)

An in-depth interview is a type of interview with an individual that aims to collect detailed information beyond initial and surface-level answers.

- [Key informant interviews](#)

Key informant interviews involve interviewing people who have particularly informed perspectives on an aspect of the program being evaluated.

- [Keypad technology](#)

Keypads are used in group meetings to gauge audience response to presentations and provide valuable feedback in large group settings.

- [Mobile data collection](#)

Mobile Data Collection (MDC) is the use of mobile phones, tablets or personal digital assistants (PDAs) for programming or data collection.

- [Photovoice](#)

Photovoice is a participatory photography method that seeks to empower marginalised people to share their experiences through digital storytelling.

- [Photolanguage](#)

Photolanguage is a projective technique to elicit rich verbal data where participants choose an existing photograph as a metaphor and then discuss it.

- [Polling booth](#)

Polling booth is a data collection methodology used to obtain sensitive information from participants.

- [Postcards](#)

Postcards can be used to collect information quickly, and they can also be used to provide a short report on evaluation findings (or an update on progress).

- [Projective techniques](#)

Projective techniques, originally developed for use in psychology, can be used in an evaluation to provide a prompt for interviews.

- [Questionnaires](#)

A questionnaire is a specific set of written questions which aims to extract specific information from the chosen respondents.

- [Email questionnaires](#)

Email Questionnaires are surveys or questionnaires that are distributed online via email.

- [Face-to-face questionnaires](#)

Face-to-face questionnaires are conducted by an interviewer asking questions of a respondent in person.

- [Internet questionnaire](#)

An internet questionnaire allows the collection of data through an electronic set of questions that are posted on the web.

- [Mobile questionnaires](#)

Questionnaires and surveys can be conducted through mobile phones which are able to connect to the internet.

- [Mail questionnaire](#)

Questionnaires can be mailed out to a sample of the population, enabling the researcher to connect with a wide range of people.

- [Telephone questionnaires](#)

Respondents can be surveyed using questionnaires delivered by telephone.

- [Seasonal calendars](#)

Seasonal calendars are useful for evaluation as they can help analyse time-related cyclical changes in data.

- [Sketch mapping](#)

Sketch mapping is useful for creating a visual representation ('map') of a geographically based or defined issue drawn from the interpretation of a group or different groups of stakeholders.

- [Stories of change](#)

Stories of change show what is valued through the use of specific narratives of events.

Structured with a beginning, middle and end, they focus on the change that has taken place due to the program.

- [Personal stories](#)

Personal stories provide qualitative data about how people experience their lives and can be used to make sense of the past and to understand possible futures.

2. Information from groups

- [After action review](#)

The after action review (AAR) is a simple method for facilitating an assessment of organisational performance by bringing together a team to discuss a task, event, activity or project in an open and honest fashion.

- [Brainstorming](#)

Brainstorming involves focussing on a problem and then encouraging participants to come up with as many solutions as possible.

- [Card visualization](#)

Card visualization is a participatory method for capturing data that uses paper cards to allow groups to brainstorm and share their ideas.

- [Concept mapping](#)

A concept map shows how different ideas relate to each other - sometimes this is called a mind map or a cluster map.

- [Delphi study](#)

The Delphi technique is a quantitative option to generate group consensus through an iterative process of answering questions.

- [Dotmocracy](#)

Dotmocracy is an established facilitation method for collecting and recognizing levels of agreement on written statements among a large number of people.

- [Fishbowl technique](#)

The fish bowl activity is used to manage group discussion.

- [Future search conference](#)

A future search conference is a meeting that spans more than one day with the objective that participants identify a shared vision of the future towards which to aim.

- [Interviews](#)

Interviews are conversations between an investigator (interviewer) and a respondent ('interviewees', 'informants' or 'sources') in which questions are asked in order to obtain information.

- [Focus groups](#)

A focus group is a type of group interview designed to explore peoples attitudes.

- [Mural](#)

A mural, a large drawing on the wall, can be used to collect data from a group of people about the current situation, their experiences using a service, or their perspectives on the outcomes from a project.

- [ORID](#)

ORID is a specific facilitation framework that enables a focused conversation with a group of people in order to reach some point of agreement or clarify differences.

- [Q-methodology](#)

Q-methodology (also known as Q-sort) is the systematic study of participant viewpoints.

- [Social mapping](#)

Social mapping, or 'wellbeing ranking', is used to identify households using pre-determined indicators based on socio-economic factors.

- [SWOT analysis](#)

The SWOT analysis is a strategic planning tool that encourages group or individual reflection on and assessment of the Strengths, Weaknesses, Opportunities and Threats of a particular strategy and how to best implement it.

- [World cafe](#)

The world café is a methodology for hosting group dialogue which emphasizes the power of simple conversation in considering relevant questions and themes.

- [Writeshop](#)

A Writeshop is a writing workshop involving a concentrated process of drafting, presenting, reviewing and revising documentation of practice.

3. Observation

- Gathering information by observing people, places and/ or processes either directly or through still or moving images (photography or video). This cluster of methods involves watching and documenting the incidence of objects and/ or the behaviour of people.

These methods do not involve gathering data directly from individuals or groups, but rather about observing individuals, groups and things. Evaluators of an education project may observe the physical attributes of a school, the accessibility of the site, the availability of latrines, library, and playground. The evaluator may observe the numbers of boys and girls in a classroom, the teaching techniques used and the types of resources that children use.

- [Field trips](#)

Field trips are organised trips where participants visit physical sites.

- [Non-participant observation](#)

Non-participant Observation involves observing participants without actively participating.

- [Participant observation](#)

Participant observation is used to identify the attitudes and operation of a community by a researcher living within its environs.

- [Photography/Video recording for data collection](#)

This option uses a series of still photographs or videos taken over a period of time to discern changes taking place in the environment or activities of a community.

- [Transect](#)

Transect walks are a method for gathering spatial data on an area by observing people, surroundings and resources while walking around an area or community.

4. Physical measurements

- Measuring physical changes based on agreed indicators and measurement procedures. Examples include birth weight, nutrition levels, rain levels, and soil fertility.
- [Biophysical measurement](#)

Biophysical measurement measures physical changes that take place over a period of time related to a specific indicator and using an accepted measurement procedure.

- [Geographical](#)

Capturing geographic information about persons or objects of interest such as the locations of high prevalence of a disease or the location of service delivery points.

5. Existing documents and data

- Often information required for an evaluation has already been collected for other purposes. Ministries, government agencies, NGOs, and other organizations often produce valuable reports that you can use to supplement your own data collection. The document review process provides a systematic procedure for identifying, analyzing, and deriving useful information from existing documents such as project documents, information on related projects, government records and publicly available statistics. Document review can assist in triangulating findings collected through other evaluation methods, for example interview and observations. Document review can also reduce duplication.

An evaluator may review existing documents for the following reasons: to gather background information, to determine if implementation of the program reflects the program plan, when you need information to help you develop other data collection tools for evaluation and when you need data to answer what and how many evaluation questions commonly collected by other agencies.

- [Big data](#)

Big data refers to data that are so large and complex that traditional methods of collection and analysis are not possible.

- [Logs and diaries](#)

Logs, journals and diaries are monitoring tools for recording data over a long period of time.

- [Official statistics](#)

Statistics published by government agencies or other public bodies such as international organizations are often useful in evaluations.

- [Previous evaluations and research](#)

Using the findings from evaluation and research studies conducted on the same or closely related areas is an important first step for evaluation planning.

- [Project records](#)

Documents developed by the project including periodic project reports (monthly, biannual, annual), baseline data, needs assessments, internal and external evaluations, technical advisor input reports, and field reports.

- [Reputational monitoring dashboard](#)

A 'reputation monitoring dashboard' allows users to monitor and quickly appraise reputational trends at a glance and from a variety of different sources.

Manage data

Good data management includes developing effective processes for consistently collecting and recording data, storing data securely, backing up data, cleaning data, and modifying data so it can be transferred between different types of software for analysis.

Good data management is inextricably linked to data quality assurance –the processes and procedures that are used to ensure data quality. Using data of unknown or low quality may result in making the wrong decisions about policies and programmes. Data quality assurance (DQA) should be built into each step in the data cycle ? data collection, aggregation and reporting, analysis and use, and dissemination and feedback.

Even when data have been collected using well-defined procedures and standardised tools, they need to be checked for any inaccurate or missing data. This “data cleaning” involves finding and dealing with any errors that occur during writing, reading, storage, transmission, or processing of computerised data.

Ensuring data quality also extends to presenting the data appropriately in the evaluation report so that the findings are clear and conclusions can be substantiated. Often, this involves making the data accessible so that they can be verified by others and/or used for additional purposes such as for synthesising results across different evaluations.

Commonly referred to aspects of data quality are:

- *Validity*: The degree to which the data measure what they are intended to measure.
- *Reliability*: Data are collected consistently; definitions and methodologies are the same when doing repeated measurements over time.
- *Completeness*: Data are complete (i.e., no missing data or data elements).
- *Precision*: Data have sufficient detail.
- *Integrity*: Data are protected from deliberate bias or manipulation for political or personal reasons
- *Availability*: Data are accessible so they can be validated and used for other purposes.
- *Timeliness*: Data are up-to-date current and available on time.

Methods

- [Consistent data collection and recording](#)

An important aspect of data quality is to ensure data is collected consistently across different sites and different data collectors.

- [Data backup](#)

Data backup refers to onsite and offsite, automatic and manual processes to guard against the risk of data being lost or corrupted.

- [Data cleaning](#)

Data cleaning involves the detection and removal (or correction) of errors and inconsistencies in a data set or database due to data corruption or inaccurate entry.

- [Effective data transfer](#)

Effective data transfer involves processes to move data between systems, including between software packages, to avoid the need to rekey data.

- [Secure data storage](#)

Processes to protect electronic and hard copy data in all forms, including questionnaires, interview tapes and electronic files from being accessed without authority or damaged.

- [Archive data for future use](#)

Putting systems in place to store de-identified data so that they can be accessed for verification purposes or for further analysis and research in the future, researchers can extend the range of the data collection efforts and encourage future innovati

Resources

- [Data management](#)

Supports the design of quality data management systems. (Food and Agriculture Organization, Fisheries and Aquaculture Department)

- [Data quality tools and mechanisms \(archive link\)](#)

Guides to three tools that can be used to assess the quality of data and reporting systems. (The Global Fund)

- [Data Quality](#)

This online course from the Global Health Learning Centre is designed to help learners understand what data quality is, why it is important, and what programs can do to improve it.

Combine qualitative and quantitative data

Using a combination of qualitative and quantitative data can improve an evaluation by ensuring that the limitations of one type of data are balanced by the strengths of another.

This will ensure that understanding is improved by integrating different ways of knowing. Most evaluations will collect both quantitative data (numbers) and qualitative data (text, images), however it is important to plan in advance how these will be combined.

Methods

When data are gathered

- [Parallel data gathering](#)

Qualitative and quantitative data are gathered at the same time.

For example, a closed-ended questionnaire to many service users is done at the same time as semi-structured observations of the service center.

- [Sequential data gathering](#)

Sequencing is one way of combining qualitative and quantitative data by alternating between them.

When data are combined

- [Component design](#)

Component design is an approach to mixed methods evaluation that conducts qualitative components of the evaluation separately to quantitative components and then combines the data at the time of report writing.

- [Integrated design](#)

Integrated Design is an approach to mixed options evaluation where qualitative and quantitative data are integrated into an overall design.

Purpose of combining data

- [Enriching](#)

'Enriching' is achieved by using qualitative work to identify issues or obtain information on variables not obtained by quantitative surveys.

- [Examining](#)

'Examining' refers to generating hypotheses from qualitative work to be tested through the quantitative approach.

- [Explaining](#)

'Explaining' involves using qualitative work to understand unanticipated results from quantitative data.

In principle, this mechanism may operate in either direction – from qualitative to quantitative approaches or vice versa.

- [Triangulation](#)

Triangulation facilitates validation of data through cross verification from more than two sources.

Resources

Guides

- [Introduction to mixed methods in impact evaluation](#)

This guide, written by Michael Bamberger for InterAction outlines the elements of a mixed methods approach with particular reference to how it can be used in an impact evaluation.

- [Conducting Mixed-Method Evaluations](#)

This technical note from the US Agency for International Development (USAID) provides an overview to using a mixed-options approach for evaluation and outlines some of the important considerations that must be taken into account when using the MM approach.

Analyse data

Analysing data to summarise it and look for patterns is an important part of every evaluation.

The methods for doing this have been grouped into two categories - quantitative data (number) and qualitative data (text, images).

Methods

Numeric analysis

- Analysing numeric data such as cost, frequency, physical characteristics.
- [Correlation](#)

Correlation is a statistical measure ranging from +1.0 to -1.0, represented by 'r', that indicates how strongly two or more variables are related and whether that relationship is positive or negative.

- [Crosstabulations](#)

Crosstabulation (or crosstab) is a basic part of survey research in which researchers can get an indication of the frequency of two variables (e.g. gender or income, and frequency of school attendance) occurring at the same time.

- [Data mining](#)

Data mining is the systematic process of discovering patterns in data sets through the use of computer algorithms.

- [Exploratory techniques](#)

Taking a 'first look' at a dataset by summarising its main characteristics, often by using visual methods.

- [Frequency tables](#)

A frequency table provides collected data values arranged in ascending order of magnitude, along with their corresponding frequencies.

- [Measures of central tendency](#)

Measures of Central Tendency provide a summary measure that attempts to describe a whole set of data with a single value that represents the middle or centre of its distribution.

- [Measures of dispersion](#)

Measures of dispersion provide information about how much variation there is in the data, including the range, inter-quartile range and the standard deviation.

- [Multivariate descriptive](#)

Multivariate descriptive statistics involves analysing relationships between more than two variables.

- [Non-parametric inferential statistics](#)

Inferential statistics suggest statements or make predictions about a population based on a sample from that population. Non-parametric tests relate to data that are flexible and do not follow a normal distribution.

- [Parametric inferential statistics](#)

Parametric inferential tests are carried out on data that follow certain parameters.

- [Summary statistics](#)

Summary statistics provide a quick summary of data and are particularly useful for comparing one project to another, or before and after.

- [Time series analysis](#)

A time series is a collection of observations of well-defined data items obtained through repeated measurements over time.

Textual analysis

- Analysing words, either spoken or written, including questionnaire responses, interviews, and documents.

- [Content analysis](#)

Content analysis is a research method in the social sciences used to reduce large amounts of unstructured textual content into manageable data relevant to the (evaluation) research questions.

- [Thematic coding](#)

Thematic coding is a form of qualitative analysis that involves recording or identifying passages of text or images that are linked by a common theme or idea allowing you to index the text into categories and therefore establish a “framework of thematic

- [Framework Matrices](#)

A framework matrix is a way of summarizing and analyzing qualitative data in a table of rows and columns.

- [Timelines and time-ordered matrices](#)

Timelines and time-ordered matrices are useful ways of displaying and analysing time-related data.

Resources

Websites

- [WISE: Web Interface for Statistics Education](#)

WISE's website organises a large amount of statistics resources available on the web into one central place.

Tools

- For an overview of specialist tools for qualitative data analysis, see the [CAQDAS](#) site at the University of Surrey which compares ten packages including Atlas.Ti, HyperResearch and NVivo.

[Visualise data](#)

Data visualisation is the process of representing data graphically in order to identify trends and patterns that would otherwise be unclear or difficult to discern.

Data visualisation serves two purposes: to bring clarity during analysis and to communicate.

The choice of what type of graph or visualisation to use depends greatly on the nature of the variables you have, such as relational, comparative, time-based, etc. Here we have adopted and modified the categorization system used by [ManyEyes](#) (archived link, IBM closed this service in 2015).

That said, sometimes graphing data with an inappropriate visualisation can lead to insights during analysis that would have remained hidden. Experimentation with visualisations during analysis is okay, but when communicating a visualisation, use the graph types listed under the proper methods below. Incorrect visualisation leads to confusion, errors, and abandonment among viewers.

The methods listed here can support both purposes of analysis and communication. You may want to graph data during analysis to see, for example, spikes in website traffic related to your social media campaigns. Visualisation, in this instance, eases data analysis. When communicating that data, however, the visualisation may need to be simplified and key areas may need emphasis in order to call the attention of readers and stakeholders. See the discussion under Report and Support Use for more information about how you may want to repack a data visualisation for communication purposes.

Each main method below contains several visualisation possibilities. Click on each to see examples and read advice on using and choosing that visualisation method.

This graphic by Andrew Abela from [Extreme Presentations](#) provides a good representation of different types charts that can be used to visualise data.

Diagram showing four categories of charts to choose from

(c) 2006 A. Abela, used with permission. www.ExtremePresentation.com. [View this chart as a pdf](#).

Methods

See relationships among data points

- [Scatterplot](#)

A Scatterplot is used to display the relationship between two quantitative variables plotted along two axes. A series of dots represent the position of observations from the data set.

- [Matrix chart](#)

A matrix chart shows relationships between two or more variables in a data set in grid format.

- [Network diagram](#)

A network diagram uses a set of nodes and connecting lines to display of how people (or other elements) in a network are connected.

It is usually a product of social network analysis.

Compare a set of values

- [Bar chart](#)

A bar chart plots the number of times a particular value or category occurs in a data set, with the length of the bar representing the number of observations with that score or in that category.

- [Block histogram](#)

A histogram is a graphical way of presenting a frequency distribution of quantitative data organised into a number equally spaced intervals or bins (e.g. 1-10, 11-20...).

- [Bubble chart](#)

Commonly used on maps, and x/y-axis plots, or no plot at all, bubble charts communicate the raw count, frequency, or proportion of some variable where the size of the bubble reflects the quantity.

- [Bullet graph](#)

Bullet graphs encode a single variable as a bar.

- [Deviation bar graph](#)

Deviation bar graphs are simply two bar charts aligned, where one of the charts runs right to left rather than left to right.

- [Dot plot](#)

Dot plots encode single data points with circles, often on a line.

- [Small multiples](#)

Small multiples are an array of graphs on the same scale that are grouped together in a row or grid and are often used to simplify a data display.

Changes over time

- [Line graph](#)

A line graph is commonly used to display change over time as a series of data points connected by straight line segments on two axes.

- [Slopegraph](#)

A slopegraph is a lot like a line graph, in that it plots change between points however, a slopegraph plots the change between only two points, without any kind of regard for the points in between.

- [Split axis bar graph](#)

While many graph types geared toward comparisons ask the viewer to subtract the difference between the heights of two bars or the space between two points on a line, a deviation bar graph simply graphs the difference.

- [Stacked graph](#)

Stacked graphs depict items stacked one on top (column) of the other or side-by-side (bar), differentiated by coloured bars or strips.

See the parts of a whole

- [Icon array](#)

An icon array is a display in which one shape is repeated a specific number of times (usually 10, 100 or 1,000) and then some of the shapes are altered in some way (usually by colour) to represent a proportion.

- [Pie chart](#)

A pie chart is a divided circle, in which each slice of the pie represents a part of the whole.

The categories that each slice represents are mutually exclusive and exhaustive. Data with negative values cannot be displayed as a pie chart.

- [Treemap](#)

A treemap displays hierarchical relationships through a set of rectangles, sized proportionately to each data point, clustered together into one large rectangle.

Analyse a text

- [Phrase net](#)

Phrasenets are useful for exploring how words are linked in a text and, like word clouds and word trees, can be informative for early data analysis.

- [Word cloud](#)

Word clouds or tag clouds are graphical representations of word frequency that give greater prominence to words that appear more frequently in a source text.

- [Word tree](#)

Word trees use a visual branching structure to show how a pre-selected word(s) is connected to other words.

See the world

- [Demographic mapping](#)

Demographic mapping is a way of using GIS (global information system) mapping technology to show data on population characteristics by region or geographic area.

- [Geo-tagging](#)

Geo-tagging is the process of adding geographic information about digital content, within “metadata” tags - including latitude and longitude coordinates, place names and/or other positional data.

- [GIS mapping](#)

GIS mapping will typically display one data variable or indicator, often using colour coding to indicate the density, frequency, or percentage in a given region, allowing quick comparison between regions.

- [Interactive mapping](#)

Interactive mapping involves using maps that allow zooming in and out, panning around, identifying specific features, querying underlying data such as by topic or a specific indicator (e.g., socioeconomic status), generating reports and other means of u