

What is data collection software?

Data collection software is a computerised system for the collection and storage of qualitative and quantitative data in an electronic form.

The **benefits** of using data collection systems is that they eliminate the use of paper surveys and allow data to be quickly exported for data analysis and reporting.

Data collection software was first introduced in the early 1980s (Hyde, 1998) to address the many shortcomings of paper-based forms, such as increased errors through transcription and late detection of inaccuracies. The first of these systems to become widely adopted were Microsoft Access and MySQL. With the turn of the century came the cloud, which expanded any web browser into a platform to visualise and complete forms. This innovation was the big bang of the paper-less movement.

Despite the advances in web-based data entry systems, historically field researchers and clinical teams working on the go have still suffered from the burden of paper-based data gathering. This is due to a simple reason: web-based data recording tools become useless when there is no internet. Although smartphone adoption in the world has skyrocketed in the last five years, internet access has not increased at the same speed, and so much of the world today remains offline.

Capturing data offline

Data collection apps are mobile applications that make it possible to collect data from a smartphone, tablet or iPad. One of the main **advantages** of data collections apps is the possibility of gathering data offline or while on-the-go. **Offline forms** allow researchers that are working in places with unreliable internet to store a backup of their data on their mobile device and upload it once an internet connection is available.

As researchers today see the immense advantages of using mobile survey apps over paper-based forms, the number of data collection solutions grows. With this article, we hope to answer the question of which of these options may suit your research purposes best.

Case Management vs Cross-sectional data collection

When looking into data gathering tools for research, it is essential to acknowledge that projects differ in their design and purpose. Thus the mobile survey platform of choice should be flexible enough to be used for a range of different data, as well as in potentially disconnected areas.

One crucial distinction between different research projects is the time frame. Will the data only be captured from subjects once, in other words, cross-sectional? Or does the research require measurements at multiple moments across time, in other words, longitudinal?

Cross-sectional

Research that involves recording data at a single one point in time, a so-called, snapshot of a population is a cross-sectional study. This data is only collected once. Often, these studies do not collect personally identifiable information (PII) as there is no need for a follow-up on the study subjects. These types of studies are always observational, wherein researchers record information about their subjects without manipulating the study environment. Examples of cross-sectional studies are patient registries or household surveys.

Case Management

Some projects will require the same subjects to be surveyed at different moments of time, in other words longitudinally. To be able to efficiently follow-up on subjects, longitudinal projects require a data gathering solution that supports case management.

Case management is the ability to create entities and follow-up on them across time. A case can be anything — patient, beneficiary, location, program or facility. Case management saves time and improves data quality in longitudinal research because it eliminates the need to re-enter baseline data each time the same subject is assessed.

With an ever-increasing saturation of mobile survey solutions, we researched the best ones to date. We aimed to investigate their range of

utility - for both cross-sectional and longitudinal studies-, their suitability for offline surveys, and their further services that set them apart.