

Data Collection Surveys and Platforms

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There are many different types of surveys and survey platforms out on the internet for collecting quantitative and/or qualitative information. It can be difficult to know which survey tool will be the best for a particular circumstance. Different surveys are needed depending on who is creating the survey, taking the survey, and what type of data is needed. Some types of surveys are needed for internal data collection, external data collection, qualitative data, quantitative data, or a combination. In addition, data collection tools vary by their statistical analysis techniques. Some tools incorporate analytics into the survey system others have to be organized manually. Each tool has its own strengths and weaknesses.

Collector for ArcGIS

Collector is an ESRI application designed more specifically for mobile in-field data collection. It is based exclusively on the ArcGIS Online geospatial platform which allows for immediate integration with ArcGIS Online mapping services. For survey creation and data collection purposes, both creators and users of the map and application are required to have an ArcGIS Online account. Collector is most useful for in-the-field data gathering and more specifically for those organizations that employ fieldworkers. More info here: <https://www.esri.com/en-us/arcgis/products/collector-for-arcgis/overview>

Pros

- Allows for online and offline in-field data collection
- Ability to add photos, videos, or audio media
- Streaming allows fieldworkers to walk along a feature and points are automatically laid down
- Mobile platform makes for ease of mobility for data collection
- Collection includes point, line, and polygon geometries
- Gives user the option to change between multiple basemaps
- Provides real-time data mapping (unless collecting offline)

Cons

- Difficult to edit the survey post-publication or on the fly
- Takes a bit of work to create the survey upfront

Survey123 for ArcGIS

Survey 123 is an app created by ESRI and integrated with ArcGIS Online platform. Since it is based in the ArcGIS Online platform, the creators of any survey need an ArcGIS Online account. Post-distribution any Survey123 survey is free for users to submit answers to. The survey is compatible with multiple interfaces including phone, table, laptop, etc. It is most useful for a citizen science applications to gather widespread data and be able to map and analyze it. More info here: <https://www.esri.com/en-us/arcgis/products/survey123/overview>

Pros

- It has the option for incorporating a map-based questions into the survey
- Includes integrated statistical analysis
- Survey works in offline environments
- Has the capability to embed audio, images, maps, and other media
- Easy and intuitive to create and distribute survey (via link or QR code)

- Allows for users to see real-time data submissions
- Easy to edit the survey post-publication

Cons

- The map only allows for one type of data point – point or line or polygon
- Some glitches when loading a map, especially if it is a required question
- Map integration is slightly more difficult than other formats
- Doesn't allow user to switch between different basemaps

GeoForm for ArcGIS

Geoform is another application in the ESRI geospatial suite. It is a data collection tool for point-based features. It is mainly used to add data to a map's attribute table. The attribute table, consequently, becomes the questions on the GeoForm. All features and information gathered by users integrate directly with this table. GeoForm is most useful for gathering widespread information from the public. It has fewer features than Survey123, but is just as good at capturing information.

More info here: <https://www.arcgis.com/home/item.html?id=931653256fd24301a84fc77955914a82>

Pros

- Map integration is easier than Survey123
- GeoForm creation tool leads the user through step by step
- Survey creator can allow users to toggle between 2 different basemaps
- Easy to edit fields in the feature layer during survey construction

Cons

- GeoForm creation is not very intuitive
- Only allows for the collection of point data
- Not great for capturing information offline
- Only works on a web browser- doesn't support mobile or tablet formats

Comparison between Collector, Survey123, and GeoForm:

<https://community.esri.com/groups/survey123/blog/2015/09/04/survey123-collector-and-geoform-a-quick-comparison>

Google Forms

Google Forms is a free application in the Google suite of tools. In order to create a survey all that is required is access to a free google account. It is not integrated into a geospatial platform and, therefore, it cannot be used to collect place-based data points. More info here: <https://www.google.com/forms/about/>

Pros

- Easy survey creation capabilities
- Mobil and desktop-based service
- Easy to collaborate with multiple people
- Ability to add photos, audio, and video media

Cons

- Does not have the ability to integrate geospatial questions

Qualtrics

Qualtrics is a suite of survey products used for gathering data on experience (customer, employee, brand, and products). It also includes surveys for research services. This survey is also not based in the geospatial world. It requires a paid account. This software is best for creating simple or complex surveys and offers comprehensive post-survey analysis. More info here: <https://www.qualtrics.com/core-xm/survey-software/>

Pros

- Includes complex data analysis and tracking tools
- Software is explicitly created for surveys
- Host a wider variety of integrated tools and question formats

Cons

- Does not have the ability to integrate geospatial questions

Survey and Data Collection Platform Comparison

Surveys	Ideal target audience	Membership type	Geometric data	Geolocation	Analytics	Parent organization	Survey creation (pre-publishing)	Post Publishing survey editing capabilities
Collector	Ideal for internal data collectors. Best for collecting data in the field.	Need to pay for ArcGIS Online membership, only those with an online account can access the data collection service.	Can map points, lines, and polygons within one application.	Yes – geometry is collected directly within a map.	The information gathered is based directly on attributes designed pre-data collection. Analytics are only manual and essentially map-based.	ESRI	Creation of this data collection service is more difficult. A lot of care needs to be spent creating the feature layers and attributes that will be populated in the field.	More difficult to edit once the collection service has been used to gather data. Fields and attributes need to be edited then added to a new map.
Survey123	External survey taker.	Need ArcGIS Online membership to create survey, but anyone can take the survey.	Only point, only line, only polygon. No combinations.	Yes – can create a map from the data gathered.	Statistical derivations are directly integrated with the Survey123 software. Data analysis includes identifying keywords, setting up comparative graphs, etc.	ESRI	Survey creation and publishing is easy. It is not directly connected to a map immediately so there are fewer moving parts.	Easy to edit the survey after publishing. Slightly more difficult to edit after answers have been taken.

GeoForm	External survey taker.	Need ArcGIS Online membership to create survey, but anyone can take the survey.	Depends on how the form is set up. There is an option to have all three geometries in one form, or to have one individual geometry.	Yes – can create a map from the data gathered.	The information gathered is based directly on survey questions designed pre-data collection.	ESRI	Creation of this data collection service is more difficult. A feature layer needs to be created that the survey will populate as it is filled out.	More difficult to edit post publishing. Need to edit the feature layer in order to edit the content of the survey.
Google Forms	External survey taker.	Free with a google account for survey creator and taker.	None – no mapping data.	None – no mapping data.	Responses are collected in “Forms” with charts and graphs and can also be viewed in “Sheets”. Google Analytics can be integrated to gather information about the user. https://www.formstack.com/guides/track-forms-google-analytics	Google	Very easy to create, immediately intuitive.	Unclear.
Qualtrics	External survey taker.	Need to pay for the service.	None – no mapping data.	None – no mapping data.	This format can be used with Stats iQ to automatically derive statistics about the data. It can also be used with different analytic software to understand information about the user.	Qualtrics	Slightly more difficult to create only because the software is a bit confusing upon initial use.	Unclear.