

## Video Five: Data Analysis and Reporting

### Page 1: Customer Satisfaction Survey Basics for NGOs

Hi again. Welcome, my name is Rebecca Sullivan.

Funded by Community Sector Banking - 2019 Social Investment Grants Program and in partnership with the NSW Council of Social Service, Survey Matters have produced a series of short videos to help NGOs understand best practice when conducting Customer Satisfaction Surveys.

### Page 2: Customer Satisfaction Survey Basics for NGOs

There are six videos in total, each taking you through a different aspect of the research process. This is the fifth video in the series.

This video covers the final stage in the survey process, data analysis and reporting.

### Page 3: Customer Satisfaction Survey Basics for NGOs

As I just said, data analysis and reporting is the final stage in the survey process.

And there are two main steps in this process – cleaning and analysing the data to understand the feedback and uncover insights and preparing reports to share those insights and findings.

So let's go through those in a bit more detail.

### Page 4&5: Steps involved in data analysis

There are five main steps involved in data analysis. We will go through each step in more detail throughout this video, however, here is an overview of each step

1. The first thing you need to do, if you have collected your data via telephone or paper surveys is to **input your data** into a survey software tool.
2. The next step is to **clean your data**. This involves correcting or deleting data records to maintain accuracy and quality.
3. Next, you should **review your data**. Look at it to understand the composition of your sample and what your data is telling you overall.
4. After these steps, you can undertake your **analysis**. We will cover common methods of analysis and how to assess open ended questions.

## **Page 6: Input your data**

So the first step is to input your data. If you have run an online survey, this will obviously not be necessary. Respondents input their data as they complete their survey. However, if you have collected data via telephone or on paper surveys, it will be necessary to compile the data in some way.

- While there are a few ways to do this, including excel or other spreadsheet packages, we recommend entering your data directly from your paper or telephone-based surveys directly into your chosen survey software tool. This makes the process of checking your data entries much easier, provides the benefit of automatic calculation of results and minimises risk of error.
- When you enter your data into a software tool, the records will store as if the respondent completed it online. Therefore, the software tool will code all responses in the background and make it user-friendly for you to access and download the results. Since the software will do most of the heavy lifting for you, your role is to make sure that all information entered is correct
- When entering your data accuracy is key. Each data entry must reflect the original record from respondents. Entries should be checked to ensure accuracy and consistency.

## **Page 7: Clean your data**

Data cleaning is one of the most important steps in the data analysis process. It is the safety measure that we put in place to make sure all records are as accurate as possible

Data cleaning is the process of correcting or deleting records that are not accurate from your responses. There are three key things to look out for when cleaning your data:

- **Quick survey responses**  
You only need to look at this if using an online survey method. Remove respondents who complete your survey too quickly. This indicates a lack of interest in your survey topic.
- **Extreme responders**  
Remove participants who only ever record extreme responses such as 'strongly agree' or 'strongly disagree'. Extreme response bias can occur if the respondent feels a general indifference towards the survey, therefore is not interested in answering a survey honestly. It could also occur if the respondent is willing to please the organisation or if the actual question is worded so that respondents are enticed to give a desired answer.
- **Neutral responders**  
Remove respondents who remain neutral and select 'neither agree nor disagree' for all statements.

## **Page 8: Review your data**

After you have cleaned your data, you are in a position to have a first look at your results. Reviewing your data is a two-fold process.

### **Firstly, you must understand the composition of your sample.**

To understand your results and what they mean, it is really important that you have a sense of who completed your survey. Who makes up your sample? For example, did more males than females complete your survey? Did more young people participate? Is your sample mainly comprised of long-term service users? It is really important to examine the specific characteristics of your sample so that you can report your findings through an accurate lens.

- Another thing to think about is if your sample is **representative of your population**. We talked about this in Video 4.
- It can be hard to make sure your sample is representative, because as researchers we are at the mercy of respondents completing our survey. So it is important to recognise that even though every effort should be made to get a representative sample, sometimes this is not always possible.
- When obtaining a representative sample is not possible, you must acknowledge how your sample is different from the population. While it does not mean that your results are invalid, it is just something to be aware of. It also means you should take caution that when reporting results, you are not generalising information to your population if your sample is not representative of this population.

**The second thing to do when reviewing your data is to take a step back, look at your overall results and try to get an overall sense of your data. You can usually do this by running a standard report from your survey software.**

- What is it telling you? Are there any key statistics or findings that are interesting? Is there a story in the data?
- Also, you might like to look for trends or comparative data points.
- How does the data compare to other information you have about the topic? If you are conducting the survey over time, how do these results compare to previous iterations of the survey. For example, are respondents more satisfied than last year? Does it look like there are specific areas of your service with which respondents are more, or less, satisfied?
- When looking for data trends, it is important to keep in mind your sample size. If you have a small sample, there is a degree of unreliability in your data so interpret your results with caution.

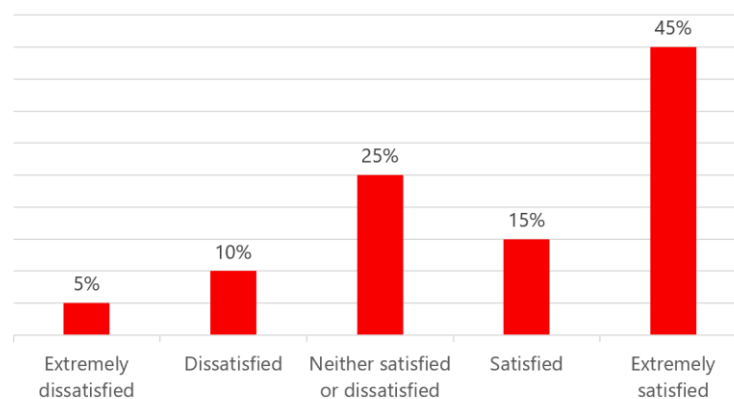
## Page 9: Detailed analysis & charting

Once you have an overall sense of what your data is telling you, you can start a more detailed analysis.

- The most common and basic type of data analysis used is known as frequency analysis. Frequency analysis is a descriptive statistical method that shows the number of occurrences of each response selected by your respondents.
- The chart on this page shows an example of frequency analysis. Charting volunteer satisfaction, it shows the proportion of respondents who selected each option and indicates that 5% are extremely dissatisfied, 10% were dissatisfied, 25% were neutral, 15% are satisfied and 45% are extremely satisfied with their experience volunteering with your organisation.

### Example of frequency analysis

Overall, how satisfied were you with your experience in volunteering for (organisation)?  
Sample size n=87



- Most survey software tools such as Survey Monkey and Survey Gizmo will have reporting functions that will produce a frequency analysis for each question. This will help give you an overview of the data graphically. If you require more detailed analysis you can always export your data into Excel or specialised statistical packages such as Q or SPSS.
- Typically, you will see column, pie and bar charts used in frequency analysis. We will run through a few examples of this in a minute.
- Again, when conducting frequency analysis, it is important to pay attention to your sample size. If your sample is small results and the differences between them can look bigger than what they actually are.

**Page 10: Common chart options for different question types (part 1)**

So what charts are appropriate to use for different question types? We have put together a guide on appropriate chart options you can use.

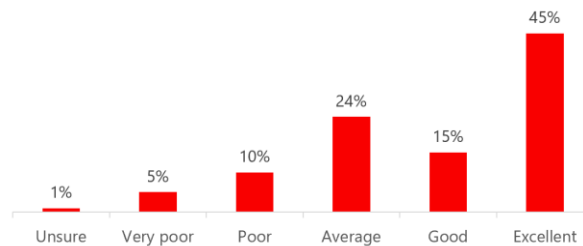
The charts on this page are typically used for questions where the responses add to 100%.

- If you have any rating scale type questions – whether it is for agreement, satisfaction or likelihood we recommend using column charts.

**1. Rating scales use column charts**

*Overall, how would you rate the training session?*

	Very Poor
	Poor
	Average
	Good
	Excellent
	Unsure

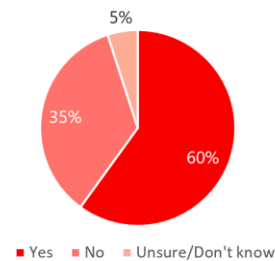


- For single response questions when categories are distinctly different, we would suggest using a pie chart. Pie charts are often used for yes/no questions, and for population or demographic questions such as gender, age and location.

**1. Single response questions use pie charts**

*Would you like more information about (organisation) and how you can support the work they do?*

	Yes
	No
	Unsure / Don't know



## Page 11: Common chart options for different question types (part 2)

- If you have a multiple response type question, where respondents are able to select multiple options from a list and the responses do not add to 100%, we recommend that you use bar charts to display your information clearly. As in the example here.

### 1. Multiple response questions use bar charts

How could (organisation) improve your experience as a volunteer?

More training / opportunities for professional development
Greater flexibility around how and when I can volunteer
Opportunities to volunteer more often
More support from the supervisor / team
Greater focus on health and safety for volunteers
More feedback about my performance
More information about the role and the contribution my work makes
More information about the volunteering opportunities that are available
Greater public recognition of the contribution volunteers provide
More opportunities for volunteers / team members to network and socialise
Other (please specify)



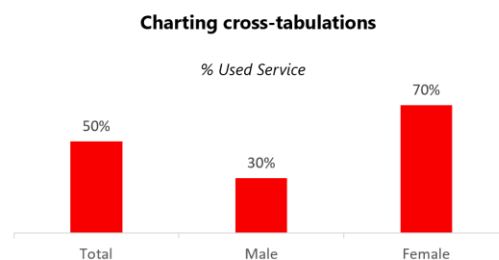
## Page 12: Using cross-tabulations in data analysis

Cross tabulation is another data analysis method in statistical analysis.

- It is commonly used to when you want to delve a little deeper into your results and analyse the relationship between multiple variables.
- Cross tabulation calculates the number and percentages of respondents in different groups who responded in a particular way, and provides more information than looking at the total overall.
- For example, the data below looks at the impact of gender on respondents' use of a service. As you can see, while 50% of respondents overall have used the service, cross tabulation indicates that this increases to 70% of females and falls to only 30% of males.

**How cross-tabulations work**

	Gender (%)		Total
	Male	Female	
Used Service (%)			
Yes	30%	70%	100%
No	70%	30%	100%
<b>Total</b>	<b>100%</b>	<b>100%</b>	



- It is important to recognise that cross tabulations can only be used on questions that group data into mutually exclusive groups. For example, gender has two distinct groups – male and female. Other groups that are often used are age, location, income, length of service / association.
- It is important to note that the ability to run cross-tabulations is limited in software and survey tools. Instead cross tabulation is typically carried out in Excel or specialised statistics software such as SPSS or Q.

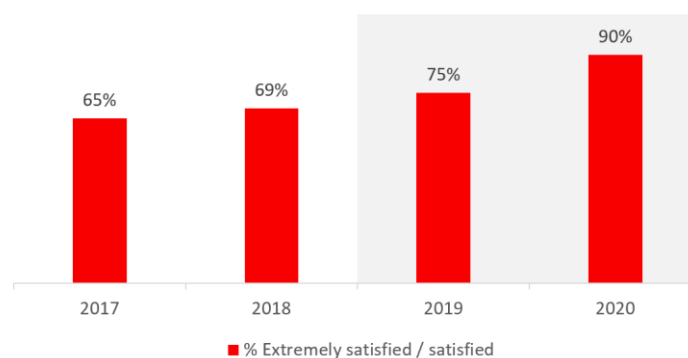
### **Page 13: Significance testing**

When looking at your data it is important to recognise that major shifts between two points are not always meaningful even though they may appear to be large.

- Significance testing is a technique used to assess whether observed differences are large enough to be reliable and that they are not just due to chance and error.
- While calculating statistical significance is outside of the scope of this video, it pays to be aware of the general concept and things to look out for.
- An example might be the best way to explain this. In the chart here, there has been an increase in volunteer satisfaction, from 75% in 2019 to 90% in 2020. However, it is important to ask whether the increase in volunteer satisfaction from 2019 to 2020 is real and due to activities and initiatives in that year, or whether the change could be simply due to chance or error?
- When assessing data like the example, it is important to look at your sample size. With a small sample, there is always the chance that we randomly ended up with a group of people who answered the survey in a particular way. The chance of this occurring reduces the larger the sample becomes. So, in our example, we would need to take care before drawing any inferences because our sample size is less than 30 for our 2020 data point.

#### **Satisfaction with volunteering over time**

*Overall, how satisfied were you with your experience volunteering for (organisation)?*  
 Sample size 2017 n=90, 2018 n=86, 2019 n=91 2020 n=27



### **Page 14: Dealing with open ended questions**

So far, we have discussed quantitative analysis, but what about if you have qualitative open-ended responses to analyse? How do you go about sorting through what can be hundreds of comments to find the common thread?

- **The first thing you need to do is get to know your data.**  
Review all responses to your open-ended questions and get a feel of what your respondents are saying. By doing this you start to understand emerging themes and how this links up to some of your other results.
- **Secondly, theme your responses into general categories.**  
To do this you can start as broad or as general as you like. For example, you could start with a broad approach and code all your statements in positive, negative and neutral categories. Alternatively, you could code your response into specific categories, for example grouping all comments that refer to training, to customer service or to cost.
- **Next, we create sub-categories**  
If you have re-occurring themes within a broad category you should create smaller sub-categories. For example, within the 'positive' category you may have a sub-category of 'satisfaction with services'
- **Review your groupings**  
Once you have grouped everything into categories and sub-categories you should then review your grouping. If you have classified any of your statements incorrectly, move them into correct categories.
- **Finally, use numbers and quantify your open-ended comments.**  
This is where you turn your number of observations in each category into percentages. For example, it might be that 30% of free text comments were positive endorsements of customer service, 20% referenced training and 50% spoke of cost.

### **Page 15&16: Reporting based on your audience and requirements**

The last stage of data analysis is visualising your outputs for reporting. And the first and most important thing to do at this stage is to think about your audience.

- For example, you might need to prepare a report for executive and operational managers, grant funders, government, service users or a range of other different audiences.
- Each of these groups would be looking for information for different reasons. You may also need to produce specific reports based on requirements specific to your organisation, or to the group that has asked for the information. So, it is really important that you report and visualise your data at a level that is appropriate for your audience.

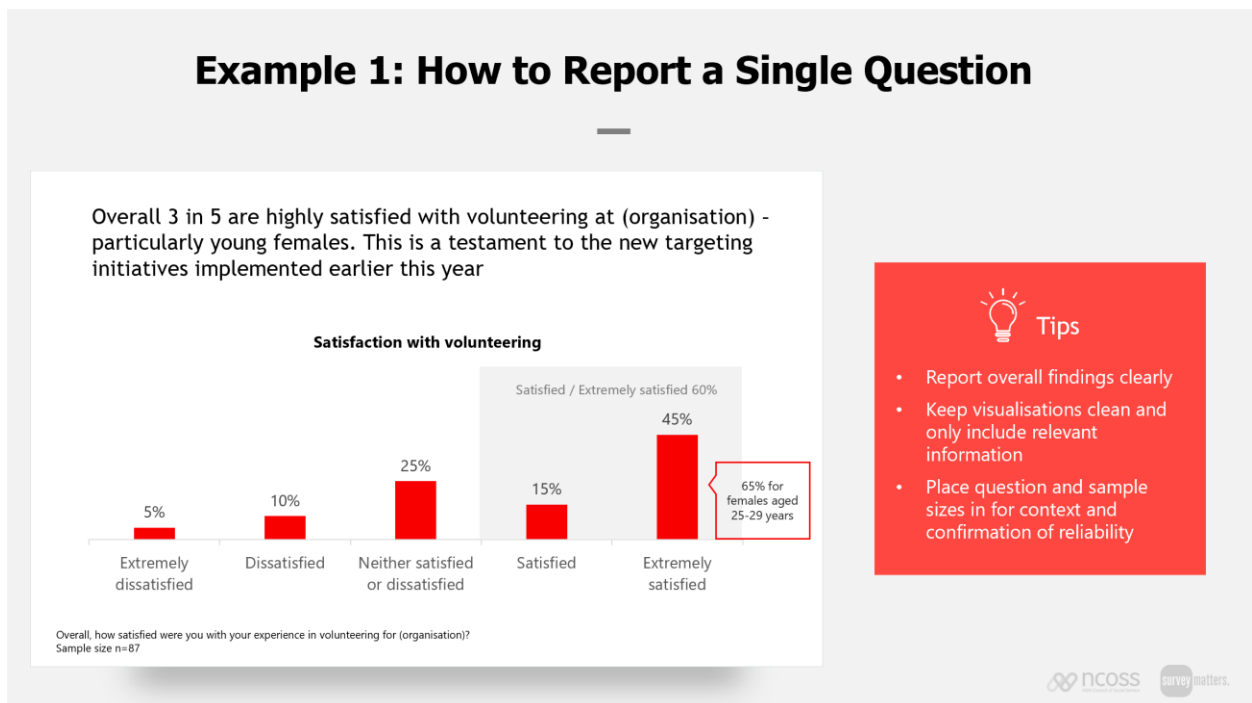


- Survey software tools have reporting functions – and you can produce an overall report to review your results. While this is a good starting point for an overview of your data, if you need more detailed analysis of your data, such as cross tabulations or comparisons to previous data, you might need to download your results and create your own report in another program, such as Word or PowerPoint (we usually find that PowerPoint is much easier to work with). This is also the case if you need to combine the results with written interpretation and analysis of the data.
- Most importantly when it comes to reporting - choose the style of reporting that works best for your project objectives and tailor accordingly. For example, reports for government or funding agencies may need to be formal, with in depth written analysis. Conversely, reporting findings back to service users could be done with a higher level, visual report.

**Page 17: Example 1 of good reporting practice: Single rating scale question**

To help you work out how to report your results, and the type of charts you might need to produce, we have prepared a few slides that provide examples of good reporting practices in research.

- This first one provides an example of how to report results from a single rating scale question.

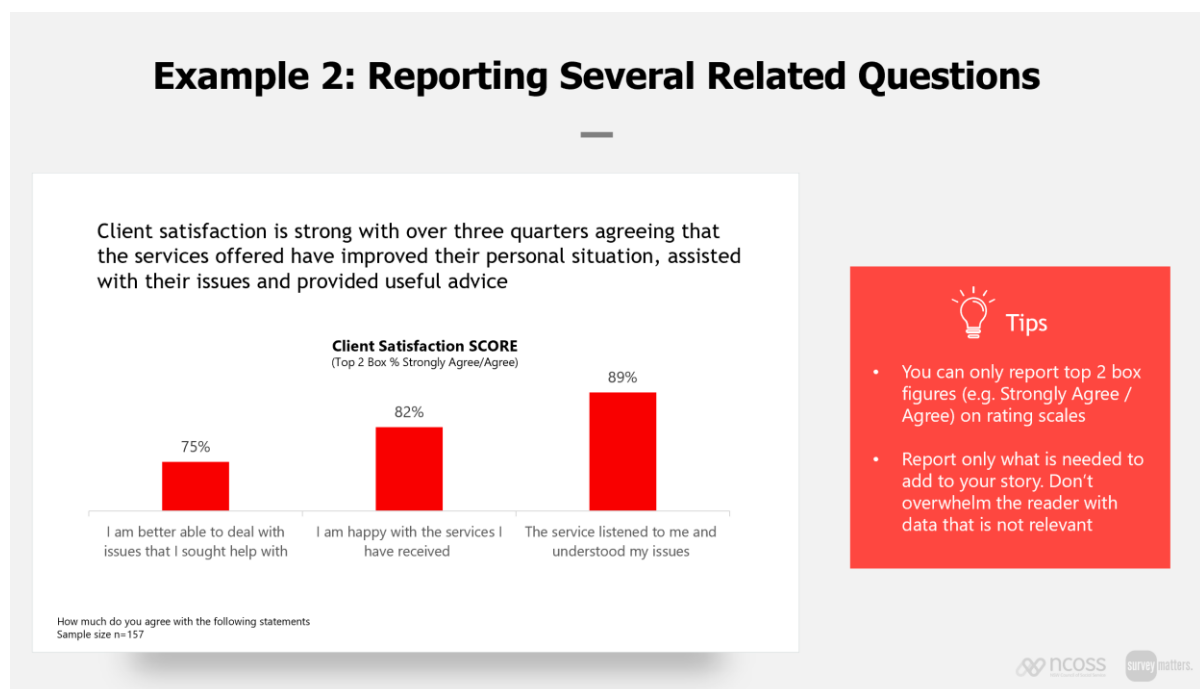


- As you can see the percentages are charted out neatly on a column chart, with a summary of the ‘top 2 box’ percentages. This helps readers quickly conclude that majority of volunteers (60%) are satisfied

- Top 2 box refers to the highest two rating options for a question, for example agree and strongly agree, satisfied and extremely satisfied, likely and highly likely.
- To further explore this number – we then reveal the results of cross-tabulating age and gender with volunteer satisfaction. This provides further depth that volunteer satisfaction is largely driven by females aged 25-29 years.
- Note that the heading is clear and gets straight to the point of your data, and provides a summary of the result for quick reference and understanding.
- Always place question and sample sizes in for context and reliability.

**Page 18: Example 2 of good reporting practice: multiple questions on one chart**

Our next example looks at a client satisfaction SCORE which is made up of three components: satisfaction with services received, agreement that the service listened and understood the client’s issues and that the client is better able to deal with issues since receiving the service.

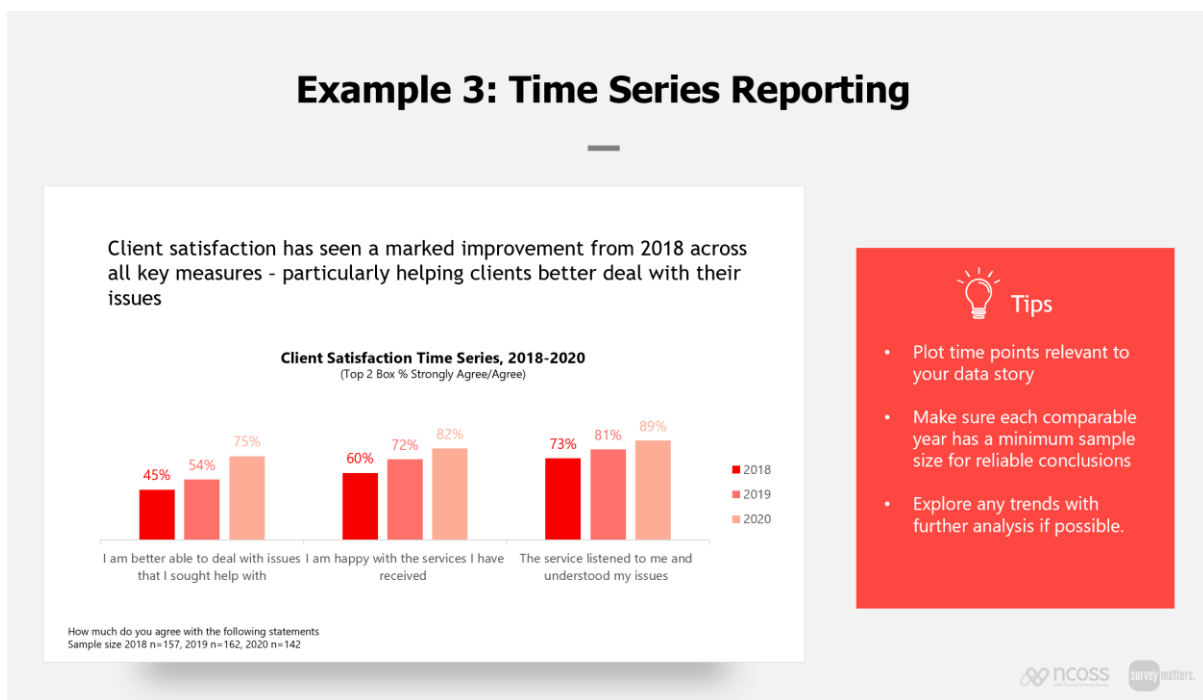


- As these statements are all related, and may form part of the overall score, it is could be really helpful to have them on the same chart.
- However, charting the full five-point scale for each statement is a lot of information that may overwhelm readers. It would also require three separate charts.
- So instead it is appropriate to only chart the ‘Top 2 Box Score’ – that is, the proportion of respondents who strongly agree and agree with each statement

- This makes for a much cleaner chart and still communicates the story we want to deliver
- Again, use clear headings and do not overwhelm readers with information irrelevant to the story you are trying to tell

**Page 19: Example 3 of good reporting practice – reporting time series / results over time**

Our last example looks again at client satisfaction over time.



- Often you will need to report the results of a survey, compared to the results from the same survey at different time points.
- Again, like in the previous example, charting the full five-point scale for each statement for each year is a lot of information that may overwhelm readers. It would also require several separate charts and would make it difficult to quickly identify the changes.
- So instead it is appropriate to only chart the ‘Top 2 Box Score’ – that is, the proportion of respondents who strongly agree and agree with each statement, for each year.
- This allows you to quickly identify the changes on a year on year basis, for each statement. If you have several years data, it also allows you to identify the direction of any trends over time.

## Page 20: Special reporting considerations

Reporting can be carried out in a variety of different ways. However regardless of your approach you should keep the following considerations in mind

- **Firstly, make sure you sample size is large enough.**  
You have heard me say this repeatedly a few times, but it is essential that you have a sample size of over 30 for all sub-groups to maintain anonymity and reliability of your sample
- **Secondly, avoid outcome reporting bias.**  
Don't selectively report some outcomes and not others depending on whether the nature and direction of the results are favorable for you and your organisation
- **And lastly avoid funding bias.**  
Don't intentionally support the interests of financial donors when reporting. Always keep your results honest and balanced

## Page 21: Other analyses

We have touched upon a few a basic analysis so you can start analysing and reporting your data. And, unless there are specific requirements for a given project, these are probably the main things you will need to consider.

- However, there are also several other statistical analyses you can use depending on your project objectives
- **Tracking analyses** are useful in monitoring results over time or comparing one time point to another. This may be an important analysis to use if you plan on monitoring service outcomes over time, with a view to continuous improvement.
- **Segmentation** analyses examine demographic and attitudinal characteristics of different groups within your population so you can profile your target market. As an example, you may use this approach to segment your service users into groups so that you can tailor and promote future activities and services to suit the needs of different groups.
- **Benchmarking** is another useful analysis that evaluates the results of your survey to other external measures. This can be useful to understand your competitive position, to evaluate your performance and to develop strategies for improvements.

If you are not sure which analysis applies to your project objectives, please get in touch with us

### **Page 22 – Conclusion, and Next Videos**

So that concludes our video on the last phase in the research process data analysis and reporting. Hopefully this video provided you with a guide to how to best analyse and report your survey information.

The final video in the series examines the ethical considerations in research. We recommend you watch this one before you start your survey.

### **Page 23 – Questions. Contact Us**

If you have any questions, we are also available by phone or email. So feel free to reach out to us at any time.

Thanks for watching!