CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ
TEACHING & LEARNING UNIT

# QUARTILES

CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ
MATHEMATICS

## QUestionaAiRes – Training In planning and Launching Effective Surveys

Maretta Brennan, Dr Michael Brennan, Dr Clodagh Carroll, Dr Julie Crowley, Dr David Goulding, Dr Seán Lacey, Dr J.P. McCarthy, Dr Marie Nicholson, Dr Declan O'Connor, Dr Violeta Morari, Sarah Murphy, Dr Catherine Palmer, Dr Noreen Quinn
*Department of Mathematics, Cork Institute of Technology*
**https://mathematics.cit.ie/quartiles**

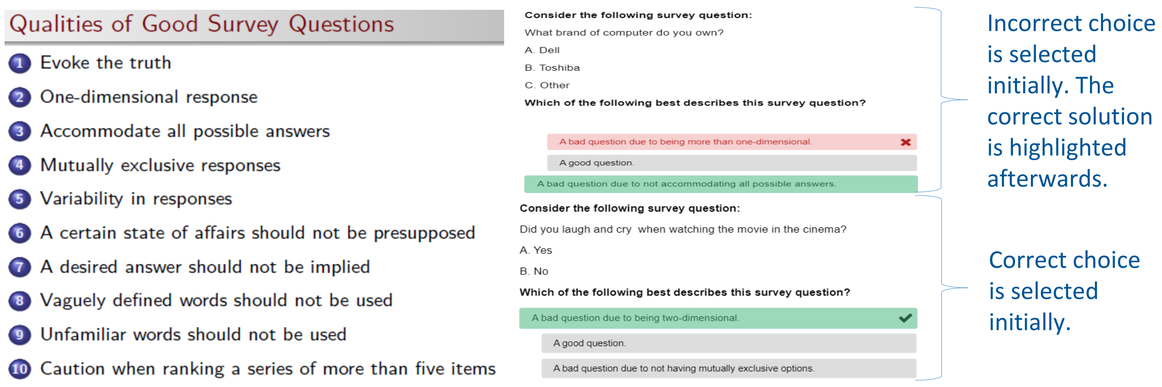
**Introduction:** There is a prevalence of survey usage across Higher Education Institutes. Surveys are sometimes regarded as an easy approach to obtaining opinions and measurements. However, it is easy to conduct a survey of poor quality rather than one of high quality and real value. The purpose of this project was to assist colleagues to produce survey work to a high standard, meaning a standard at which the results will be regarded as credible. This was achieved though the development of Continuing Professional Development (CPD) related materials that staff can use in planning and launching their own effective survey. The resources were complemented by the organisation of CPD seminars in questionnaire design and good practice in statistical analysis.

**1. Information Session:** The project team facilitated a focus group with colleagues across the institute to share their work plan to develop learning resources, along with exploring whether there are other issues around planning and launching effective surveys that colleagues encounter on a regular basis and would like supported by the *QUARTILES* project team.

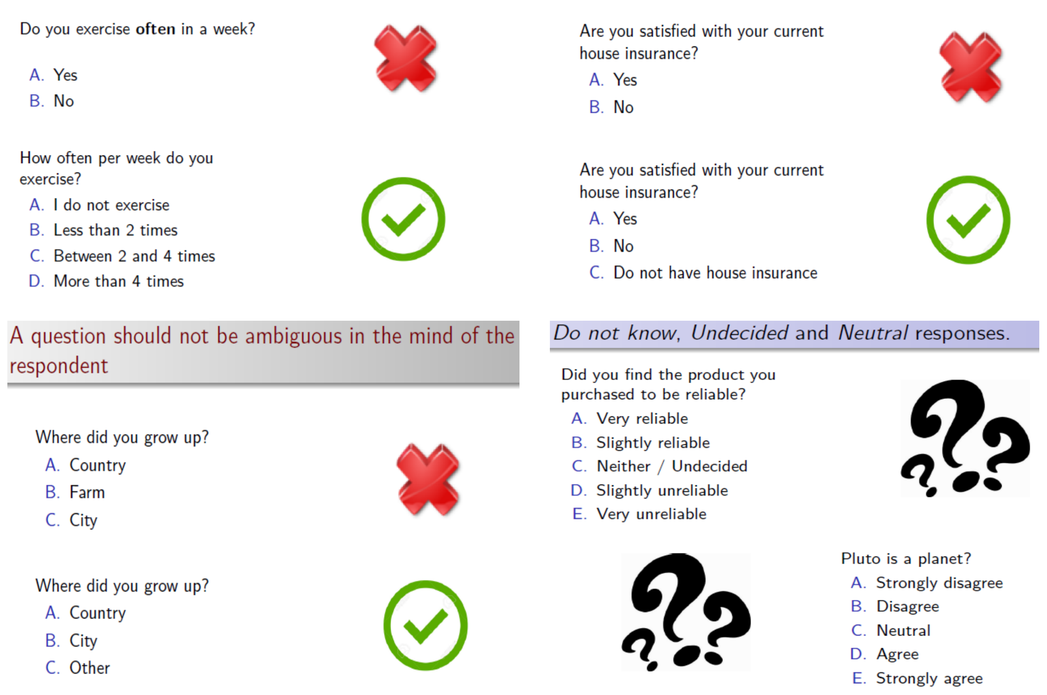
## 2. Develop Online Learning Resources: The project team developed numerous online learning resources on questionnaire design and related topics.

### 2.1 Interactive Video demonstrating Qualities of Good Survey Questions

The project team summarised the qualities of good survey questions into 10 types with breaks in the video for interactive tasks. The interactive tasks are in the form of multiple choice questions (MCQs), with the solution displayed once the initial choice is made. If an incorrect choice is selected, then the correct solution is highlighted (see below).

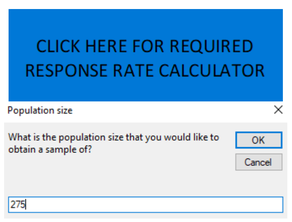



The interactive tasks are available after guidelines to qualities of good survey questions are presented. Below is a selection of some of guidelines presented in the video.




### 2.2 Required Response Rate:

In survey research, the response rate is the number of people who answered the survey divided by the number of people in the sample. It is usually expressed in the form of a percentage. The required response rate is dependent on the population size, level of confidence and selected margin of error. The project team developed a calculator that outputs a range of response rate calculations dependent on various levels of confidence and margin of error.




**Required sample size in order to satisfy a particular level of confidence and margin of error**

| Population size | 275 | Margin of error | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 0.5% | 1.0% | 2.0% | 4.0% | 6.0% | 8.0% | 10.0% |
| Level of confidence | 99% | 274 | 271 | 258 | 218 | 173 | 134 | 104 |
| | 95% | 274 | 268 | 247 | 189 | 136 | 98 | 72 |
| | 90% | 273 | 265 | 237 | 167 | 112 | 77 | 55 |
| | 85% | 272 | 262 | 227 | 149 | 95 | 63 | 44 |
| | 80% | 271 | 258 | 217 | 133 | 81 | 52 | 36 |

**Required response rate in order to satisfy a particular level of confidence and margin of error**

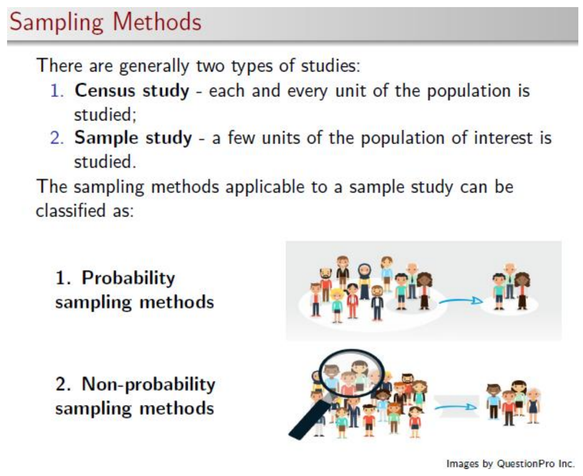
| Population size | 275 | Margin of error | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 0.5% | 1.0% | 2.0% | 4.0% | 6.0% | 8.0% | 10.0% |
| Level of confidence | 99% | 99.6% | 98.5% | 93.8% | 79.3% | 62.9% | 48.7% | 37.8% |
| | 95% | 99.6% | 97.5% | 89.8% | 68.7% | 49.5% | 35.6% | 26.2% |
| | 90% | 99.3% | 96.4% | 86.2% | 60.7% | 40.7% | 28.0% | 20.0% |
| | 85% | 98.9% | 95.3% | 82.5% | 54.2% | 34.5% | 22.9% | 16.0% |
| | 80% | 98.5% | 93.8% | 78.9% | 48.4% | 29.5% | 18.9% | 13.1% |

The response rate calculator is accompanied by guidelines on how to interpret level of confidence and margin of error.

### 2.3 Sampling Methods:

One of the most important factors which determines the accuracy of a survey result is sampling. If anything goes wrong with your sample then it will be directly reflected in the final result. The project team elaborate on:

1. **Probability sampling methods:**
Simple random sampling; Systematic sampling; Stratified sampling; Cluster sampling.
2. **Non-probability sampling methods:**
Convenience sampling; Judgement sampling; Quota sampling and Snowball sampling.




### 2.4 Additional Resources:

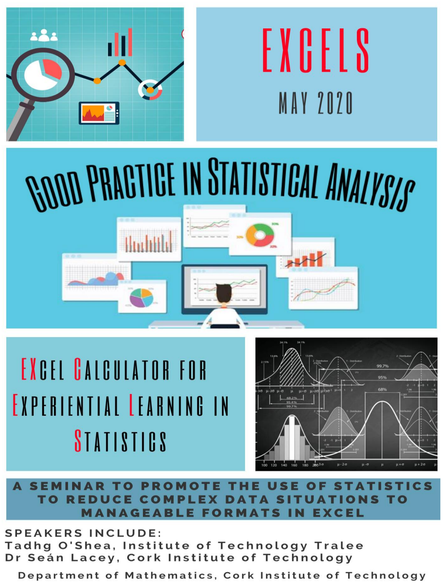
The project team are currently developing learning resources on:

- Guidelines on Order of Questions, Questionnaire Length and Question Wording;
- Demonstration of using an Online Survey Platform;
- Guidelines on Statistical Analysis.

## 3. CPD Seminars

***REQUIRED*** *(**R**esearch **E**thics in **QU**estionna**IRE** **D**esign)* seminar was supported by over 80 delegates (internal and external to CIT) across multiple disciplines (both academic and non-academic), and highlighted the relevance of and interest in data collection, storage and analysis. Feedback from the CPD seminar was extremely positive and highlighted a desire for a seminar on statistical analysis.

***EXCELS*** *(**EX**cel **C**alculator for **E**xperiential **L**earning in **S**tatistics)* will take place in May, 2020.




## Ten Tips in Planning and Launching Effective Surveys

1. Define a clear goal for your questionnaire;
2. Telephone, postal, online, face-to-face?
3. Develop a Statistical Analysis Plan;
4. State concise instructions;
5. Use simple and direct language;
6. Begin with something general;
7. Avoid leading questions;
8. Do not let your questionnaire get too long;
9. All questions should be relevant;
10. Pilot your questionnaire.

**Acknowledgements:** The project team would like to acknowledge the Department of Mathematics and Teaching & Learning Unit, CIT, for their continued support of the project, along with the Research Office and Graduate Studies Office, CIT, for the additional support in facilitating the CPD seminars.

**Contact Details:** Email: mathematics@cit.ie Twitter: @CITmaths