



TEACHING & LEARNING UNIT

QUARTILES



QUestionaAiRes – Training In planning and Launching Effective Surveys

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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).

Qualities of Good Survey Questions Evoke the truth 2 One-dimensional response 3 Accommodate all possible answers 4 Mutually exclusive responses 5 Variability in responses 6 A certain state of affairs should not be presupposed A desired answer should not be implied Output the second se Onfamiliar words should not be used Caution when ranking a series of more than five items

Consider the following survey question:	
What brand of computer do you own?	
A. Dell	
B. Toshiba	
C. Other	
Which of the following best describes this survey question?	
A bad question due to being more than one-dimensional.	×
A good question.	
A bad question due to not accommodating all possible answers.	
Consider the following survey question:	
Did you lough and cry, when watching the movie in the cinema?	
A. Yes	
3. No	
Which of the following best describes this survey question?	
A bad question due to being two-dimensional.	~
A good question.	
A bad question due to not having mutually exclusive options.	

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.

Incorrect choice	Required sample size in order to satisfy a particular level of confidence and margin of err									
is selected		Population size	275	Margin of error						
initially. The				0.5%	1.0%	2.0%	4.0%	6.0%	8.0%	10.0%
correct solution is highlighted afterwards.			99%	274	271	258	218	173	134	104
	CLICK HERE FOR REQUIRED RESPONSE RATE CALCULATORLevel of confidence	Level of	95%	274	268	247	189	136	98	72
			90%	273	265	237	167	112	77	55
		connuence	85%	272	262	227	149	95	63	44
			80%	271	258	217	133	81	52	36
Correct choice is selected initially. 275	Population size X	× Required response rate in order to satisfy a particular level of confidence and margin of error								
	What is the population size that you would like to OK OK	Population	275	Margin of error						
	Cancel	size	215	0.5%	1.0%	2.0%	4.0%	6.0%	8.0%	10.0%
	275		99%	99.6%	98.5%	93.8%	79.3%	62.9%	48.7%	37.8%
		Level of confidence	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 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.

Adjectives can mean different things to different people

Avoid a question that makes an improper assumption

Do you exercise often in a week?

A. Yes

B. No

Are you satisfied with your current house insurance? A. Yes B. No



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 Sampling Methods

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

There are generally two types of studies:

- 1. Census study each and every unit of the population is studied;
- 2. Sample study a few units of the population of interest is

How often per week do you exercise?

- A. I do not exercise
- B. Less than 2 times
- C. Between 2 and 4 times
- D. More than 4 times

A question should not be ambiguous in the mind of the respondent

- Where did you grow up?
- A. Country B. Farm
- C. City

Where did you grow up? A. Country B. City C. Other



Did you find the product you

purchased to be reliable?

C. Neither / Undecided

D. Slightly unreliable

E. Very unreliable

A. Very reliable

B. Slightly reliable



Do not know, Undecided and Neutral responses.



Pluto is a planet? A. Strongly disagree B. Disagree C. Neutral D. Agree E. Strongly agree

2. Non-probability sampling methods: Convenience sampling; Judgement sampling; Quota sampling and Snowball sampling.

studied.

The sampling methods applicable to a sample study can be classified as:

1. Probability sampling methods



2. Non-probability sampling methods



Images by QuestionPro Inc

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.

sampling.



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







EXCELS (EXcel Calculator for Experiential Learning in Statistics) will take place in May, 2020.



A SEMINAR ON DATA COLLECTION, DATA STORAGE, DATA ANALYSIS AND GDPR

SPEAKERS INCLUDE Dr Helen Purtill, University of Limerick Prof. Ger Kelly, Cork Institute of Technology Mr John Dunne, Central Statistics Office

Department of Mathematics, Cork Institute of Technology





INAR TO PROMOTE THE USE OF ST TO REDUCE COMPLEX DATA SITUATIONS TO MANAGEABLE FORMATS IN EXCE

SPEAKERS INCLUDE Tadhg O'Shea, Institute of Technology Tralee Dr Seán Lacey, Cork Institute of Technology Department of Mathematics, Cork Institute of Technology

Ten Tips in Planning and Launching Effective Surveys

- Define a clear goal for your questionnaire;
- Telephone, postal, online, face-to-face?
- Develop a Statistical Analysis Plan;
- 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.

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