

Exercises 1

- 1. Classify the following variables as qualitative or quantitative:
 - The political party of a Member of Parliament.
 - The number of elections in which a politician has been elected to Parliament.
 - The postcode of the politician.
 - The € value of bribes or kickbacks received by a politician from a construction company.
 - The number of times the politician has spoken in Parliament.
 - The phone number of the politician.
 - The political leaning of a voter: extreme right, right, centre right, centre, centre left, left, extreme left.
 - The public university closest to your home.
 - The reply of a student to the question "How do you rate your lecturer": brilliant, good, ok, boring, incomprehensible so I'm going to Pepe.
 - The time spent studying this course.
- 2. For the qualitative variables in the previous question, indicate which are dichotomous, which are nominal, and which are ordinal and for the quantitative variables, indicate which are discrete and which are continuous.
- 3. We wish to study the opinions of Madrileños on the possible Independence of Cataluña (strongly against, against, neither in favour nor against, in favour, strongly in favour). With this objective, we decide to take a sample of 20 UC3M students. Define:
 - The population of interest.
 - The variable.
 - What type of variable it is.
 - The sample.
 - The datum that corresponds with your opinion.
- 4. In the previous question, does the way of choosing the sample seem reasonable? Explain your answer briefly.

5. The following is a section of the New Zealand 2013 census questionnaire. Classify the variables in questions 23, 25, 29 and 31.

20 If you are aged 15 or older → go to 21 If you are aged less than 15 → go to 48 21 Do you smoke cigarettes regularly (that is, one or more a day)? DON'T count pipes, cigars or cigarillos. Count only tobacco cigarettes. yes → go to 23 no 22 Have you ever been a regular smoker of one or more cigarettes a day? yes yes no Wark your answer like this: 23 Which one of these statements best describes your current legally registered marital / civil union status?	Qualification? none NZ School Certificate in one or more subjects or National Certificate level 1 or NCEA level 1 NZ Sixth Form Certificate in one or more subjects or National Certificate level 2 or NZ UE before 1986 in one or more subjects or NCEA level 2 NZ Higher School Certificate or Higher Leaving Certificate or NZ University Bursary / Scholarship or National Certificate level 3 or NCEA level 3 or	Mark as many spaces as you need to show all the ways you yourself got income in the 12 months ending today. DON'T count loans because they are not income. wages, salary, commissions, bonuses, etc, paid by my employer self-employment, or business I own and work in interest, dividends, rent, other investments regular payments from ACC or a private work accident insurer New Zealand Superannuation or Veteran's Pension other superannuation, pensions or annuities (other than NZ Superannuation, Veteran's Pension o war pensions) Unemployment Benefit Sickness Benefit
If you have had more than one legally registered marriage or civil union, answer for your most recent. I have never been legally married and I have never been legally registered in a civil union I am divorced or my marriage / civil union has been dissolved I am a widow / widower or surviving civil union partner I am permanently separated from my legal husband / wife / civil union partner I am legally married I am legally married I am legally registered in a civil on without a mortgage)? If you want to without a mortgage? If you want on mark the dwelling mark family trust, mark types'	or other secondary school qualification gained overseas 27 Apart from secondary school qualifications, do you are not er completed qualifier son? DON'T count halfin trions at take than 3 months a full-study to get. 30 1 23 1 - QUITO 1 3 For tyois highest qualification, and the vall type to the came half type to the country of the	Domestic Purposes Benefit Invalid's Benefit Student Allowance other government benefits, government ome support payments, war pensions, or paid parental leave other sources of income, counting support payments from people who do not live in my household or no source of income during that time 31 From all the sources of income you marked in question 30, what will the total income be: • that you yourself got • before tax or anything was taken out of i • in the 12 months that will end on 31 March 2013 loss zero income \$1-\$5,000 See the Guide Notes to help work out your income
25 If you are male → go to 25 If you are female, answer this question. How many babies have you given birth to? number born alive none object to answering this question	subject 29 Are you attending, studying or enrolled at school or anywhere else: full-time (20 hours or more a week) part-time (less than 20 hours a week) or neither of these	\$5,001 - \$10,000 \$10,001 - \$15,000 \$15,001 - \$20,000 \$20,001 - \$25,000 \$25,001 - \$30,000 \$30,001 - \$35,000 \$35,001 - \$40,000 \$40,001 - \$50,000 \$50,001 - \$60,000 \$60,001 - \$70,000 \$70,001 - \$100,000 \$100,001 - \$150,000

Variable	Qualitative	Quantitative	Nominal	Ordinal	Discrete	Continuous
Question 23						
Question 25						
Question 29						
Question 31						

- 6. The following questions were asked in a Daily Record survey of Scottish opinions in June 2014:
 - Should Scotland be an independent country?
 - On a scale of 1 to 10, how likely is it that you would vote in a referendum on Scottish independence? (1 means absolutely certain would not and 10 absolutely certain would).

The technical information associated with the survey was as follows.

Technical note:

This presents the topline results from Scotland.

Results are based on a survey of 1,003 respondents (adults aged 16+) conducted by telephone

Fieldwork dates: 26th May 2014 - 1st June 2014

Data are weighted by: age, sex and working status using census data; tenure using Scottish Household Survey data; and public-private sector employment using Scottish Government Quarterly Public Sector Employment series data

Where results do not sum to 100%, this may be due to computer rounding, multiple responses, or the exclusion of "don't know" categories

Results are based on all respondents (1,003) unless otherwise stated

For each of the two questions, what are the population, the variable and the sample size? Are there any factors that you think could bias the survey results?

7. A recent YouGov poll of January 2018, contained the following question about the outcome of the Brexit negotiations.

And looking forward, what do you expect the outcome of the Brexit negotiations will be?

There will be a deal that gets most or all of the things the British government want. There will be a deal that gets only some of the things the British government want. There will be a deal that gets few if any of the things the British government want. There will not be any deal at all

The variable in this question is:

- i. Quantitative and Discrete.
- ii. Qualitative and Continuous.
- iii. Quantitative and Ordinal.
- iv. None of the above.