

2.2 Choose and evaluate methods for a bounded social research question

Name: _____ Class: _____ Date: _____ Total: 24 marks

KEY WORDS quantitative 定量 • qualitative 定性 • sampling 抽样

Objective

Choose and evaluate methods for a bounded social research question. This is original GAC027/GAC028-aligned practice, not an official assessment. All people, texts, records and instructions are fictional. The case data are invented for learning; they are not findings about a real school, country or population. Use the supplied evidence and do not invent missing observations.

1 Key knowledge and worked examples

■ Key knowledge: a method must fit the question and what can ethically be observed

A **quantitative** 定量 method records amounts or counts. A **qualitative** 定性 method studies descriptions and meaning. They answer different aspects of a question; neither is automatically stronger. **Sampling** 抽样 selects observations or participants. A sample's recruitment, timing and missing responses limit what it can describe. Repeated measurement supports consistency, but does not make a poorly chosen measure valid.

■ Source A: text or task brief

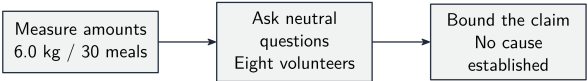
Fictional pilot question: what plate-waste amounts were recorded during three observed lunches, and what reasons did volunteering students give for leaving food? The teacher approved weighing returned plate waste after removing packaging. Use the same checked scale and method each day. Ten meals were served in each observed group. Recorded waste: Monday 2.0 kg, Tuesday 3.0 kg, Wednesday 1.0 kg. Menus differed across days. No unobserved lunches or whole-school totals were measured.

Researchers invited twelve volunteering students to private, optional interviews. Eight agreed; four declined. Seven of the eight interviewed students mentioned portion size; three mentioned insufficient lunch time. A student could mention more than one reason. Names were not recorded in the report.

■ Source B: response or review record

A proposed questionnaire asks: “Do you agree that our careless canteen wastes far too much food?” Its only options are Yes and No. A draft conclusion says: “Sixty kilograms were wasted in the school this week. Seven out of eight students in the school need smaller portions. Shorter lunch breaks cause waste, and two methods prove this. Students who refused must explain themselves publicly.” No intervention, break-length comparison or whole-school sampling was performed.

■ Worked example: calculate a bounded average without extending the sample



Known: observed waste totals $2.0 + 3.0 + 1.0 = 6.0$ kg across 30 served meals. Why divide by 30? The question is waste per meal served in these groups: $6.0/30 = 0.20$ kg. This is not the amount per diner who left food, because that count is absent. Menu differences and a three-lunch window limit comparisons and extension. The interviews give reported reasons, not demonstrated causes.

2 Practice

2.1 Identify the quantitative method and the qualitative method in the pilot. [2]

2.2 Calculate total waste and waste per served meal for the observed groups. [2]

2.3 Explain THREE limits on using the interviews to describe all school students. [3]

2.4 Rewrite the questionnaire item neutrally and supply a response format that allows an honest answer. [3]

3 Exam-style questions

3.1 Evaluate the draft conclusion and the treatment of participants using six evidence-grounded points. [6]

3.2 Write an 80–110-word pilot summary with one next step and appropriate ethical limits. [8]

Solutions

2.1

: weighing returned plate waste.: optional interviews about reasons for leaving food.

2.2

: 6.0 kg.: $6.0/30 = 0.20$ kg per served meal. Units and denominator must match the recorded group.

2.3

each: volunteer recruitment may select particular views; only eight agreed and four declined; no whole-school sampling frame or representative selection. Accept the fact that mentioning a reason measures a report rather than all pupils' needs as one distinct limit.

2.4

: remove careless/far too much/forced agreement.: a neutral focused question, e.g. "What, if anything, led you to leave food today?": open optional response or balanced choices including no food left/other/prefer not to answer. Do not force a stated cause.

3.1

each: 6.0 kg is observed, not 60 kg for the school/week; seven of eight is among interview volunteers, not all school pupils; overlapping reasons do not form mutually exclusive groups; menu/timing differences or absent intervention prevent causal attribution; using two methods does not prove a cause; refusal must be respected without public pressure.

3.2

Local analytic rubric, 8 ×: state observed total; use 30-meal denominator; bound 0.20 kg average; identify volunteered reasons; limit sample reach; avoid causal proof; respect optional participation; propose neutral approved next step; coherent truthful 80–110 word response. Example: "The three observed groups returned a total of 6.0 kilograms of plate waste from thirty served meals, giving 0.20 kilograms per served meal. This average describes only the observed lunches. Menus differed, and no whole-school total was measured. Seven of eight interview volunteers mentioned portion size; three mentioned lunch time, with overlap allowed. Their reports suggest questions to investigate, not proven causes or every student's needs. We could extend observation with the same weighing method and neutral optional questions after approval. Participation must remain voluntary, and students who decline should not face pressure or public identification."