



Week 1: Design Analytics

What are good research questions?

How to tell the difference between a **good** and a **bad** research question?

Is it built upon an
opinion?

Is the question
original?

Is it answerable?

Is it balanced?

Is it specific?

How to tell the difference between a **good** and a **bad** research question?

Can it be answered as a
simple “yes” or “no”?

Does it address a
problem?

Is it “analytical” or
“descriptive”?



Answerable or not?

Bad Is Artificial Intelligence going to take all our jobs?

Good What human skills can be substituted by AI-powered systems?

⚠ The question should be answerable (**either through deduction or induction**), and should be answerable **within a reasonable amount of time**.

Sufficiently complex or not?

Bad Can robots improve the quality of life of elder citizens?

Good In what ways can domestic robots improve the quality of life of elderly?

⚠ The answer of the question should be relatively complex (read “**not a straight yes or no**”) and must take some effort in answering.

Original or not?

Bad Is the gamification of learning beneficial or disadvantageous?

Good How does gamification of learning languages (e.g., Duolingo) impacts learners' vocabulary recall?

⚠ The question still hasn't been answered (red “**answer does not exist yet**”) or hasn't been answered in a specific context.

Specific or not?

Bad

How do smart doorbells influence people?

Good

How does smart doorbells impact pro-privacy behavior amongst gig workers?



The question should be **sufficiently specific and not vague**. This will enable you to answer it properly with data and observations.

Balanced in scope or not?

Bad

Does AI improve public health by rapidly diagnosing cancer, and performing better than doctors?

Good

Does AI-powered imaging tools improve the diagnosis of breast cancer amongst adult women?



The question should **neither be too generic or too narrow**. Instead a good question should be **focused on a single topic/theme or related topics/themes**.

Requires analysis or not?

Bad In the last decade, has the adoption of smart phones increased globally?

Good What factors have influenced the increased adoption of smart phones among refugees fleeing the Syrian war?

⚠ The question should require you to **apply (some sort of) analysis** while answering. The question should **not be answered by describing facts**.

Asks for opinions or not?

Bad

Which fitness tracker is the most appreciated?

Good

What factors contribute to the perceived appreciation of fitness trackers among non-athlete adults?



The question **should not ask for an opinion or value judgement**. Instead the question **must have its basis in data and objective evidence**.



All of them at once, I
suppose