

Business Stats Research Toolkit

Ask a good question. Then find the data.



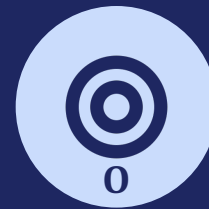
Population



Exposure



Comparison



Outcome

Turn Your Interest Into a Research Question



1. Spot It

Notice something countable in business



2. Hypothesize

Turn it into a testable prediction



3. Frame with PECO

Break it into 4 parts (below)

P • E • C • O



P — Population

Who or what group are you studying?



E — Exposure

The variable you think matters — your independent variable.



C — Comparison (optional)

The other group or condition you're measuring against. Drop it for a correlation question.



O — Outcome

What you're measuring as the result — your dependent variable.

From Hypothesis to Research Question

Comparing Groups

Hypothesis: Businesses with a loyalty rewards program keep customers longer than those without one.

P: small independent retailers

E: has a loyalty program (yes/no)

C: no loyalty program

O: customer repeat-purchase rate

Research question: *Among small independent retailers, do those with a loyalty rewards program have a higher repeat-purchase rate than those without one?*

Correlation (drop the C)

Hypothesis: More social media ad spend is associated with higher sales.

P: small retail businesses

E: monthly social media ad spend

O: monthly sales revenue

Research question: *Among small retail businesses, what is the relationship between monthly social media ad spend and monthly sales revenue?*

Is it workable?



Findable

Data exists this semester



Specific

One population, timeframe



Measurable

Numbers or clear categories



Data-answerable

Settled by a statistic

Where to Find Your Data

Start at the library's database list, then branch out.



Skyline A-Z Databases

Your starting point — filter by “Business” or search by name.



Statista

Quick statistics, industry reports, and visual data snapshots.



Business Insights: Global (Gale)

In-depth statistics, case studies, and country/industry comparisons.



Business Source Elite (EBSCO)

Full-text publications since 1985, plus company profiles.

“Why learn this if AI can just write my question?”

PECO isn't competing with AI — PECO is what makes AI useful.



Without the framework

“Help me find a business stats topic.”

You get: vague, generic suggestions you can't execute



With PECO

“My population is small independent retailers, exposure is whether they run a loyalty program, outcome is repeat-purchase rate. What confounds this?”

You get: specific, usable feedback on your actual design



It's study design

P = your sample. E = independent variable. O = dependent variable. C tells you which test to run.



It's your filter

AI gives five plausible-sounding questions. PECO is how you judge which one is actually workable.



AI doesn't know our library

It can't tell you what Statista covers or whether the data exists in a form you can get this semester.

Where AI Actually Helps

Use it as a thinking partner at each stage — not as the source of your data.



Spot it

"I'm interested in local coffee shops. What's actually countable about them?"



Define variables

"How would I operationalize 'customer loyalty' as a measurable variable?"



Search better

"Give me keyword variations for 'customer retention' in a business database."



Hypothesize

"Turn this observation into three competing testable predictions."



Stress-test it

"Here's my PECO. What's vague? What confounders am I ignoring?"



Interpret results

"What does this p-value tell me — and what does it not tell me?"

Notice the pattern: every one of these asks AI to react to your thinking — never to replace it.

Where It Doesn't — and Why That Matters Here

This is a statistics class. Your deliverable is data — so every number needs a source you can name.



Don't ask it for the data

AI can produce confident, well-formatted numbers that don't exist. Get your data from Statista, Gale, or EBSCO.



Don't trust citations unverified

Fabricated sources look real. Confirm every single one in a library database before it goes in your paper.



Don't skip to the answer

If AI wrote your question before you understood your topic, you can't defend the project when asked about it.

AI is fast at plausible. Your job is correct.

Plausible is a starting point. Correct requires a source you can name.



The habit: take any statistic AI gives you — and go find it in a database yourself.