

Research Question & Hypothesis — Service Segment

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Service Segment · Research Question & Hypothesis Charge: Rs 25000

We translate aims into precise research questions and testable hypotheses. Variables are defined, assumptions listed, endpoints made measurable, and everything aligned to feasible methods and analysis.

Structured research questions per objective using PICO or PECO where applicable

Null and alternate hypotheses with directionality and expected effect pattern

Variable mapping and clear operational definitions for predictors and outcomes

Assumptions and priors, including constraints and known limitations

Endpoint measurability criteria, scales, and thresholds for success

Methods alignment note connecting design, measurements, and

Workflow — How Research Question & Hypothesis Support Runs

1. **Capture of aims and current drafts**

You share your topic, refined aims or objectives, any existing research questions or hypotheses, and comments from your guide or reviewers.

2. **Clarifying the conceptual model**

We clarify how you believe the main variables relate to each other, what changes or differences you expect, and which outcomes matter most.

3. **Choice of framing pattern**

Depending on your design, we select appropriate frameworks such as PICO, PECO, PEO, or generic exposure–outcome structures to frame questions.

4. **Drafting primary research questions**

Primary questions are drafted so that they are focused, answerable, and clearly aligned to each main aim, with population, setting, and outcome stated explicitly.

5. **Adding secondary and exploratory questions**

Where justified, we add secondary questions for subgroups, mechanisms, or exploratory angles, while keeping workload realistic for PhD timelines.

6. **Hypothesis formulation**

For designs that require hypotheses, we frame null and alternate hypotheses with directionality and broad effect expectations that align with literature and feasibility.

7. **Variable and endpoint mapping**

Each research question and hypothesis is connected to a table of independent, dependent, and key covariates, with operational definitions and measurement plans.

8. **Assumption and limitation listing**

Core assumptions and known limitations are listed so that you and

your guide can see what must hold true for the questions to be meaningful.

9. **Methods and analysis alignment note**

We link each question or hypothesis to appropriate broad designs and analysis families, ensuring that nothing is asked that cannot be reasonably tested.

10. **Delivery and one refinement round**

You receive a clean research questions and hypotheses pack. After guide level review, one refinement cycle helps fine tune wording and structure.

What You Get in Your Research Question & Hypothesis Pack

- **Numbered list of primary research questions** clearly linked to your main aims and written in reviewer friendly language.
- **Secondary and exploratory questions** where appropriate, marked separately so that core workload remains in control.
- **Null and alternate hypotheses** for each testable question, with clear statement of direction or non direction.
- **Variable mapping table** listing independent, dependent, confounding, and effect modifier variables with operational definitions.
- **Measurement and endpoint summary** describing what will be measured, in which units or scales, and how success or change will be judged.
- **Assumptions and priors section** summarising key assumptions behind the questions and any prior evidence that motivates them.
- **Methods alignment note** indicating compatible designs and broad statistical approaches that fit the framed questions and hypotheses.
- **Ready to paste text block** combining questions, hypotheses, and variable mapping in a format that fits typical synopsis or protocol templates.

All outputs are shared in editable formats so that you can adjust phrasing,

add institute specific headings, or integrate with other sections.

Detailed Deliverables, Formats, and Service Boundaries

Deliverables and formats

- One consolidated **DOCX or PDF document** containing research questions, hypotheses, variable mapping, and alignment notes.
- A **structured table** for variables and endpoints, suitable for copy paste into synopsis or ethics forms.
- **Plain text snippet** of the research questions and hypotheses section for direct use in online submission portals.
- **Optional slide style summary** with one to two slides that show the logic from aims to questions and hypotheses.

What is included

- Refinement of your existing aims into clear research questions and, where appropriate, hypotheses.
- Help choosing between directional and non directional hypotheses depending on evidence and feasibility.
- Operational definitions for key variables, grounded in typical measurement practices in your field.
- Checking for basic coherence between questions, design type, and analysis families that you intend to use.
- One round of refinement after guide or internal reviewer feedback focused on wording and structure.

What is not included

- Full **sample size calculations or power analysis**, which are handled under separate statistical segments.
- Detailed **statistical analysis plan writing** beyond broad alignment notes.
- Guarantees regarding **ethics or synopsis approval**; final decisions remain with your guide and institutional bodies.

- Complete protocol or thesis chapter drafting that goes beyond the research questions and hypotheses space.

When to Use This Service and What You Should Have Ready

Best time to book

- After your aims or objectives are broadly defined and accepted, but questions and hypotheses are still unclear.
- When reviewers have commented that your questions are too broad, vague, or not directly testable.
- When you are about to submit a synopsis or ethics form and want clean, logically structured research questions and hypotheses.
- Mid course, when you are revising your study design and need to realign questions with what is realistically possible.

Helpful inputs from your side

- Current aims or objectives and any draft research questions or hypotheses.
- Short description of the intended design, setting, population, and key measurements.
- Comments or track changes from your guide or internal reviewers, if already available.
- Information on constraints such as sample size, recruitment possibilities, or data access limits.
- Any discipline specific conventions your department expects (for example, wording style or number of hypotheses).

FAQs — Research Question & Hypothesis

1. Do all PhD projects need formal hypotheses?

No. Experimental and many analytical observational designs often need

explicit hypotheses, while purely exploratory, qualitative, or descriptive studies may rely on research questions without formal hypotheses. We respect norms of your field while advising what is appropriate.

2. How is a research question different from an aim or objective?

Aims and objectives describe what you plan to achieve. A research question is the precise question you want the study to answer, usually stated as a question sentence and closely tied to measurable outcomes.

3. How many research questions or hypotheses should I have?

This depends on your design and feasibility, but we usually encourage a small, coherent set of primary questions and hypotheses that can be robustly answered within PhD timelines, with any additional questions marked as secondary or exploratory.

4. Can you help with directional versus non directional hypotheses?

Yes. Based on existing evidence, your comfort, and reviewer expectations, we suggest whether a hypothesis should specify direction of effect or remain non directional, and we frame wording accordingly.

5. Will you decide my study design or sample size?

We comment on whether your questions and hypotheses are compatible with the broad design you describe, but detailed design optimisation and sample size or power calculations are covered under separate segments.

6. Can you work with complex multivariate or longitudinal questions?

Yes. For studies with multiple predictors, time points, or outcomes, we help express questions in a layered way so that complexity becomes understandable to reviewers.

7. What if my guide prefers simpler wording?

If your supervisor or department has preferred structures or wording, you can share examples. We follow those patterns while keeping clarity and testability intact.

8. Is this service useful for qualitative or mixed methods work?

Yes. For qualitative components, we focus on open, exploratory research

questions, while for quantitative components we add testable hypotheses where needed. Mixed methods designs can have both types clearly separated.

9. Will you also define statistical tests for each hypothesis?

We indicate suitable analysis families at a high level, such as comparison, association, regression, or time to event. Exact tests and detailed analysis plans are handled under dedicated statistical services.

10. Can I change questions or hypotheses later?

In real projects, refinements often happen. The pack you receive is a strong, defensible starting point. If major changes occur later, they can be supported through follow up engagements in line with your guide's advice.

11. How do you ensure variables are clearly defined?

We build a simple mapping table that states for each variable what it represents, how it will be measured, in which units or scales, and any cut offs that matter. This reduces confusion during data collection and analysis.

12. Does this service cover hypothesis testing assumptions?

We list major conceptual assumptions, and where relevant, typical statistical assumptions that are linked to your design and analysis family. Detailed diagnostics and testing procedures belong to later analysis stages.

13. How is confidential information handled?

Project concepts and drafts that you share are treated as confidential academic material and are used only to shape your questions and hypotheses. Sensitive identifiers can be removed in advance where possible.

14. Can I use this pack for grant or ethics applications?

Yes. The structured questions, hypotheses, and variable mapping are often directly useful in grant, ethics, or regulatory forms. You may still need additional sections such as impact, safety, or data management, which can be added separately.