PhD Quantitative Research Proposal Checklist

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Use this checklist to review a doctoral research proposal or synopsis. Tick completed checks, mark pending items P, and record a reason for each item marked not applicable. Keep evidence or proposal page references in your review notes. All wording is newly written for this resource.

Core checks apply broadly; conditional modules apply only to the selected design. University and disciplinary requirements take priority. This comprehensive general guide cannot replace specialist protocols or guarantee that every requirement of every PhD study is covered.

Study title: _____ Reviewer: _____
University and programme: _____ Review date: _____
Proposal version: _____ Review status: _____

Submission requirements

☐ QN001 Confirm the university's current proposal or synopsis instructions, review criteria, submission route and required approvals.

☐ QN002 Check the word limit, language, margins, line spacing, headings, citation style, file type and accessibility requirements.

☐ QN003 Include the required title page, candidate and supervisor details, programme, department, institution, date and version.

☐ QN004 Provide an abstract or summary, contents page, abbreviations and declarations where required; update page numbers.

☐ QN005 Check supervision arrangements, access to expertise and any programme-specific doctoral milestones.

Research problem and doctoral contribution

☐ QN006 Use a focused title that matches the phenomenon or variables, population or material, setting and design where appropriate.

☐ QN007 Explain the background using relevant evidence; distinguish the practical issue from the research problem.

☐ QN008 Demonstrate a specific gap, unresolved debate or methodological weakness through a critical review.

☐ QN009 Explain the intended original contribution to knowledge and distinguish it from simple repetition in another location.

☐ QN010 State who may benefit, why the work matters and the limits of the proposed significance; avoid guaranteed impact.

☐ QN011 Define the scope, boundaries, key terms, unit of study and what is deliberately excluded.

Aim and research alignment

☐ QN012 State a clear overall aim and focused, feasible objectives.

☐ QN013 Match each research question to an objective, variable or outcome, data source and analysis method.

☐ QN014 Specify testable hypotheses only where warranted; distinguish confirmatory questions from exploratory analyses.

☐ QN015 Ensure the title, problem, framework, questions, hypotheses and methods describe the same study.

Critical literature review and conceptual model

☐ QN016 Describe how relevant literature will be found, including databases, search terms, dates and selection logic.

☐ QN017 Compare evidence, theories and methods across studies instead of listing article summaries.

☐ QN018 Evaluate bias, limitations, conflicting findings, contextual relevance and what existing studies cannot establish.

☐ QN019 Justify the chosen theoretical or conceptual framework and explain alternatives and boundary conditions.

☐ QN020 Define constructs, predictor and outcome roles, any mediators, moderators and confounders; show proposed relationships.

☐ QN021 Support hypotheses and expected directions with evidence; do not equate a proposed model with an established fact.

Research design and causal claims

☐ QN022 Identify the design, research setting, time frame, unit of analysis and relevant philosophical assumptions.

☐ QN023 Explain why the design can answer the questions and why realistic alternatives are less suitable.

☐ QN024 Distinguish descriptive, associational, predictive and causal aims; limit claims to what the design supports.

☐ QN025 Address temporal ordering, selection bias, measurement bias and plausible alternative explanations.

☐ QN026 Describe design-specific procedures, comparison groups, repeated observations and follow-up when applicable.

☐ QN027 Identify applicable disciplinary protocols, registration, reporting requirements and specialist review needs.

Population and sample

☐ QN028 Define target and accessible populations, sampling units, sampling frame, eligibility and study setting.

☐ QN029 Explain the sampling strategy, recruitment route, gatekeeper permissions and how participation will be invited.

☐ QN030 Justify sample size for the primary analysis using defensible effect or precision assumptions, alpha and power as relevant.

☐ QN031 Allow for non-response, attrition, clustering, weighting, subgroup needs and complex models where applicable.

☐ QN032 Explain representativeness, selection limitations and how recruitment shortfalls will be managed.

☐ QN033 For records, experiments or secondary datasets, justify the available sample and analytic precision rather than inventing a calculation.

Variables and measurement

☐ QN034 Define each construct operationally, including measurement level, timing, scoring, units and interpretation.

☐ QN035 Identify instruments and their original sources, evidence of validity and reliability, and permissions or licences.

☐ QN036 Justify language, cultural adaptation, translation and back-translation or other appropriate adaptation procedures.

☐ QN037 Plan piloting or cognitive testing and specify how problems will be resolved before the main study.

☐ QN038 Address content and construct validity, measurement error and reliability appropriate to the instrument.

☐ QN039 Prespecify missing-item rules, reverse scoring, composite construction, cut-offs and handling of uncertain labels.

☐ QN040 Plan calibration, assessor training and measurement invariance when relevant to equipment, raters or group comparisons.

Data collection and quality control

☐ QN041 Set out the collection sequence, locations, personnel, mode, duration and participant or record flow.

☐ QN042 Provide draft questionnaires, extraction forms, protocols, instructions and relevant recruitment materials.

☐ QN043 Plan training, piloting, protocol adherence, instrument checks and a record of deviations.

☐ QN044 Address duplicate responses, eligibility checks, data entry errors, response quality and audit trails.

☐ QN045 Document secondary-data provenance, original purpose, permissions, coverage and fitness for the questions.

☐ QN046 Specify coding, a data dictionary, file organisation, de-identification and reproducible processing.

Ethics and data governance

☐ QN047 Identify ethics and other approvals needed before recruitment, intervention, access or collection.

☐ QN048 Provide information and consent procedures, voluntariness, withdrawal limits and protection against coercion.

☐ QN049 Assess risks, benefits, burden, vulnerable groups, safeguarding, compensation and distress or adverse-event procedures.

☐ QN050 Explain confidentiality limits, privacy, storage security, access controls, transfer and any cloud or cross-border processing.

☐ QN051 Specify retention, deletion, ownership, sharing, reuse consent, anonymisation and breach response under applicable requirements.

☐ QN052 Declare funding and conflicts; address community, organisational or patient involvement where appropriate.

☐ QN053 Obtain licences, institutional permissions and research-specific approvals for clinical, laboratory, animal or restricted data work.

Statistical analysis plan

☐ QN054 Name the primary outcome or estimand and link each analysis to its question, design and measurement scale.

☐ QN055 Plan descriptive summaries, visual inspection, distributions and appropriate uncertainty intervals.

☐ QN056 Prespecify screening, exclusions, transformations, missing-data assessment and justified handling methods.

☐ QN057 State model assumptions and diagnostics; identify alternatives if assumptions do not hold.

☐ QN058 Explain covariate selection, confounding control, clustering, weighting and repeated-measure handling where relevant.

☐ QN059 Address multiple outcomes, comparisons and subgroup analyses; distinguish prespecified from exploratory work.

☐ QN060 Plan effect sizes and confidence or credible intervals, not significance testing alone; define thresholds where used.

☐ QN061 Prespecify sensitivity and robustness analyses, influential-observation checks and model validation as appropriate.

☐ QN062 For Bayesian analysis, justify priors, estimation, convergence checks and posterior summaries.

☐ QN063 Name software and versions where known, required expertise, reproducible scripts and an analysis amendment log.

Interpretation and reporting

☐ QN064 Plan how tables and figures will answer the questions; do not insert invented findings or predicted significant results.

☐ QN065 Discuss potential biases, uncertainty, missingness and limits to inference and generalisation.

☐ QN066 Explain how results will be interpreted against the framework and literature, including null or conflicting findings.

☐ QN067 Plan transparent reporting of deviations, exclusions and limitations and appropriate access to code or data.

Conditional design modules

☐ QN068 Randomised intervention: define intervention, comparator, outcomes, allocation, concealment, blinding and adherence procedures.

☐ QN069 Trial: address registration, protocol, harms, monitoring, stopping rules, interim analyses and oversight where required.

☐ QN070 Quasi-experiment or causal study: justify the identification strategy, its assumptions, comparison and sensitivity checks.

☐ QN071 Longitudinal or time-series study: address timing, attrition, dependency, trends and any time-varying confounding.

☐ QN072 Diagnostic study: specify the index test, reference standard, thresholds, verification and accuracy measures.

☐ QN073 SEM or mediation: justify the estimator, measurement model, identification and sample; examine fit and indirect-effect uncertainty without assuming causality.

☐ QN074 Multilevel study: explain levels, numbers of clusters, dependency, random or fixed effects and inference.

☐ QN075 Prediction or machine learning: define labels, provenance, leakage prevention, grouped splits, tuning and untouched test evaluation.

☐ QN076 Prediction study: assess calibration, discrimination, imbalance, external validity, fairness and relevant deployment limits.

☐ QN077 Evidence synthesis: specify review question, protocol, search, eligibility, screening, appraisal and synthesis methods.

☐ QN078 Laboratory or engineering experiment: document controls, replication, randomisation, calibration, safety and materials.

☐ QN079 Mixed methods: also complete the qualitative checklist and justify sequence, priority, integration and mixed-methods inference.

Feasibility and study limitations

☐ QN080 Assess access, equipment, software, skills, time, recruitment and data availability before promising delivery.

☐ QN081 Identify anticipated limitations, their implications and realistic mitigation and contingency plans.

☐ QN082 Distinguish deliberate delimitations from constraints, and assess transferability or generalisability cautiously.

Work plan and research outputs

☐ QN083 Provide a realistic timeline or Gantt chart covering review, approval, pilot, collection, analysis, writing and revisions.

☐ QN084 Include dependencies, access or ethics delays, supervisor feedback, milestones and contingency time.

☐ QN085 Justify costs, resources and funding, including licences, travel, assistance, participant payments and secure storage.

☐ QN086 Outline the thesis chapters or outputs if requested, and their connection to the questions.

☐ QN087 Explain dissemination, publication intentions, stakeholder feedback and data or code sharing within consent and permissions.

References and appendices

☐ QN088 Verify authors, dates, titles, publication details and DOI or URL records; check that each source supports the claim.

☐ QN089 Match every in-text citation to the reference list and use the required style consistently.

☐ QN090 Attach relevant instruments, permissions, recruitment materials, consent forms and analysis or sampling calculations.

☐ QN091 Include the conceptual model, operational definitions, timeline, budget and data-management plan where required.

☐ QN092 Label draft documents and approvals accurately; reference every appendix from the proposal.

Final doctoral review

☐ QN093 Confirm the gap, originality, coherence, design justification and feasibility against supervisor or committee criteria.

☐ QN094 Check that no planned result, approval, participant response, dataset or citation is fabricated.

☐ QN095 Proofread academic language, tables, numbering, terminology, tenses and formatting; remove drafting instructions.

☐ QN096 Address feedback in a revision record and obtain any required methodological or statistical review.

☐ QN097 Review university rules on authorship, research support and AI disclosure and document compliance.

☐ QN098 Prepare to explain and defend the study; resolve every pending applicable item or record a justified action plan.

Methodological resources: SPIRIT concerns randomised trial protocols; STROBE concerns reporting observational studies. Use the current full guidance when relevant. Reporting guidelines do not replace design expertise.

SPIRIT 2025 protocol guidance

STROBE observational reporting guidance

Review record and Qundeel support

Pending items and proposal page references: _____
Actions, responsible person and target date: _____
Supervisor or reviewer comments: _____

Qundeel Academic Consultancy, also known as Qundeel.com, was established in 2011 and is based in Gujranwala, Punjab, Pakistan. Founder Aamir Iqbal leads online academic guidance, proposal support, methodology and editing services. This checklist is for guidance; scholars retain responsibility for institutional compliance and submission.

PhD proposal guidance: https://qundeel.com/phd-proposal-writing-services/

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