Methodology

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Workshop on Research Grant Proposal Writing: Attaining Essential Quality for Success, Research Clusters, IPPP, University of Malaya, 06 Nov 2019

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- Very important part of research proposal → should receive a lot of attention
- Explain clearly how you conducted your study
 - enable reviewers to evaluate the work performed
 - permit others to replicate your study
- Balance between brevity and completeness





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Research design and methods:

- · Overall design
- · Methods and techniques
- · Methods of analysis
- Risks, anticipated pitfalls, and plans to overcome
- Proceed from broad to specific
- Provide context is before specific details are raised
- Use flow chart to explain overall methodology as necessary



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Purpose of Research Design / Methodology

- outlines How the research will be conducted
- identifies what type of data will be collected
- identifies how the data will be collected.
- · identifies how the data will be analysed
- states any limitations in regard to size of the project, the time available etc.



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- Methodology section can be difficult and complicated \to Use several subsections to make it easy to follow
- Be specific about the means of evaluating data, conducting the analysis
- Justify and explain your choice of methods and parameters
- If new, risky or unorthodox methods are proposed → include adequate justification, cite references
- Anticipate questions / objections of reviewer→ provide answers pre-emptively as far as possible
- Make evident connections between research objectives and research methods



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- Clear and sufficiently complete → others could repeat the work
- Assemble a simple collection of procedural outlines → turn this into prose
- Use **future tense** in methodology section in the proposal
- Provide references as necessary
- Use subheadings if necessary
- Do not include results in Methods
- Use figures to illustrate and clarify methods



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- ullet For chemicals ullet exact technical specifications, source or method of preparation
 - → Avoid trade names of chemicals
- Describe statistical tests & comparisons made
- For every result there must be a method



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Reviewers:

- Will study methodology carefully
- Decide whether the results can be trusted or not
- Can reject based on methodology



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Example from FRGS

Detailed proposal of research project

- (a) Research background including Hypothesis /Research Questions and Literature Reviews
- (b) Objective(s) of the Research
- (c) Methodology

Description of Methodology

Flow Chart of Research Activities (Please enclose in the Appendix)

Gantt Chart of Research Activities (Please enclose in the Appendix)

Milestones and Dates

(d) Expected Results/Benefit

Novel theories/New findings/Knowledge Research Publications

Specific or Potential Applications

Number of PhD and Masters (by research) Students



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- Timeline detailing projected sequence and interrelationship of major tasks gives reviewer assurance:
 - investigator is capable of careful step-by-step planning
 - work will be done in efficient and feasible manner
- Be as detailed as possible about the schedule of the proposed work.

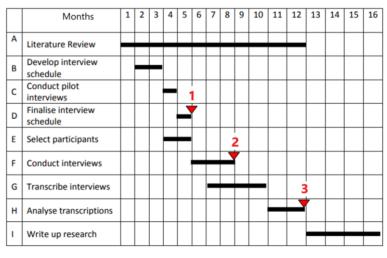
→ Gantt Chart



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A simple Gantt chart

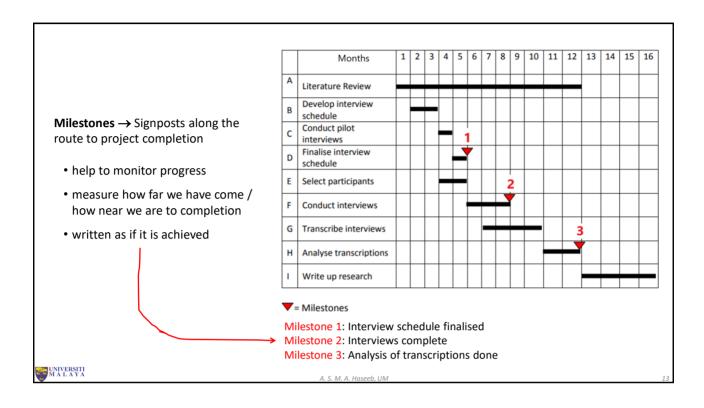
- Lists project activities and milestones against a timeline
- · Give 10-15 activities

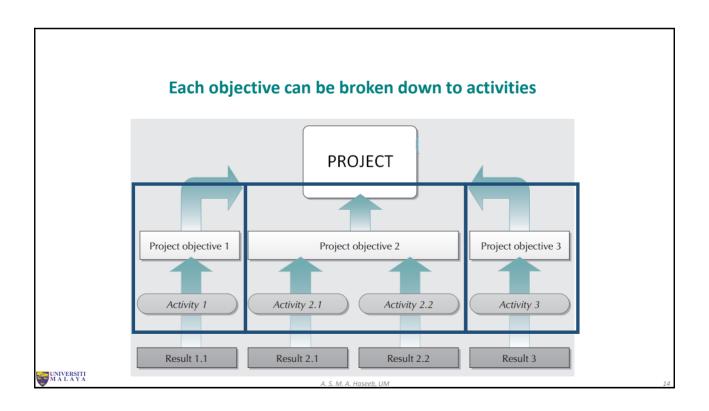


▼= Milestones

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