

Workshop

Goals for Discussion

- Role of Research Proposal in a thesis
- Feasibility of research project
- Structure and contents of Research Proposal
- Overview of research process
- Experience sharing and open discussion

Before we get started - A bit about my philosophy

- Coordinated about 10 Ph.D. Dissertations and was a committee of many (over 25)
- Always wanted the thesis/dissertation of the student to solve a real world problem
 - Research proposal came out of a real world challenge as opposed to extension of an existing theory and testing in a real world situation for its relevance
- Examples of some of the dissertations supervised
 - [Link to the other PPT](#)

Formulating a Research Question

- Electronic Medical Records have been used by hospitals to share patient data across multiple care delivery units, but their effective use has been somewhat mixed – why?
 - Do published research on why this is the case and can this research explain your observation?
 - If not, frame your research question – understand factors that will influence EMR adoption?
- Resource managers make decisions on how to allocate resources among competing priorities. How do you capture this knowledge, so it is not lost and can potentially be used in future decision making or improve decisions?
 - Conduct prior research on factors influencing managerial decisions
 - Does it help capture the type of decisions you are looking at – higher level or strategic level?
 - If not, formulate the research question: How to capture tacit knowledge used in strategic decisions so it can be used to build organizational memory?
- Internal auditors assess adequacy of internal controls to detect weakness in a system. Can it be captured in an AI system, so more systems can be audited faster or better?
 - Look at how expertise is captured in either internal control domain or accounting/auditing in general.
 - Can this knowledge be captured to improve productivity and has it been shown that such a system can improve quality of the outcome?
 - If not, formulate the research question – How to develop an expert system to capture internal control knowledge using AI so it can perform as good as expert auditors?

Research Agenda

- Define the problem
- What has prior research shown on how to address this problem and where are the gaps?
- Research question – addressing the gap or one of the gaps in prior research
- How do you propose to address it?
 - Is there a theory that you can rely on to address this?
 - Develop a model, an approach, or a system to address the gap
 - What are the expected outcomes that will show that if you answered the question?
 - Design the experiment to test your model/approach/system
 - Analyze the results to answer your questions
- Discussion of the results and their implication to current theory and/or future practice
- Discussion the limitations of your work and extensions to pursue from this work

Research Proposal

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Feasibility of research project

- Is the research question too broad to get a definitive answer?
- Is the model/approach/system based on prior theory or is it extending current research?
 - If not, you need to show why the model/approach etc. is novel or create new knowledge.
 - Often this can be hard to show.
- Do you have access to the data to answer the research question?
 - If not, you have to create a simulated experiment, that approximates the real world, to test your hypothesis
- Do you have adequate sample points or enough number of cases to show that the results you have gotten can be generalizable?
 - If you happen to use small data sets, convenience sample, or fewer number of cases, then you need to enrich the analysis using multiple types of data (qualitative to go along with quantitative, sometime secondary data from other sources, deeper analysis of the cases or longer time horizon to show a trend/behavior, etc.
- Is it doable in the time frame you have?

Structure and contents of Research Proposal

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Overview of research process

- Varies with each institution