



Research Methods

RMS 311

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RESEARCH GAP CONCEPT, FORMULATING A RESEARCH PROBLEM



Research Problem and Research Gap

- ❑ A **research problem** refers to a clear, specific issue or a difficulty that a researcher aims to address.
- ❑ A **research gap** is an area in the existing studies that has not been studied.
- ❑ A specific issue that requires **systematic investigation** to find a solution





Techniques to identify a research problem

1. Observation of phenomena
2. Literature review
3. Scholarly interactions with colleagues
4. Personal experiences



Techniques to identify a research problem

1. Observation of phenomena

OBSERVATION OF PHENOMENA

Observing a certain place, environment and pointing out any problem





Techniques to identify a research problem



1. Observation of phenomena

Good researchers exploit ALL their sense organs to understand the world around them, and hence to generate solutions for the research problems they have identified

✓ Eyes

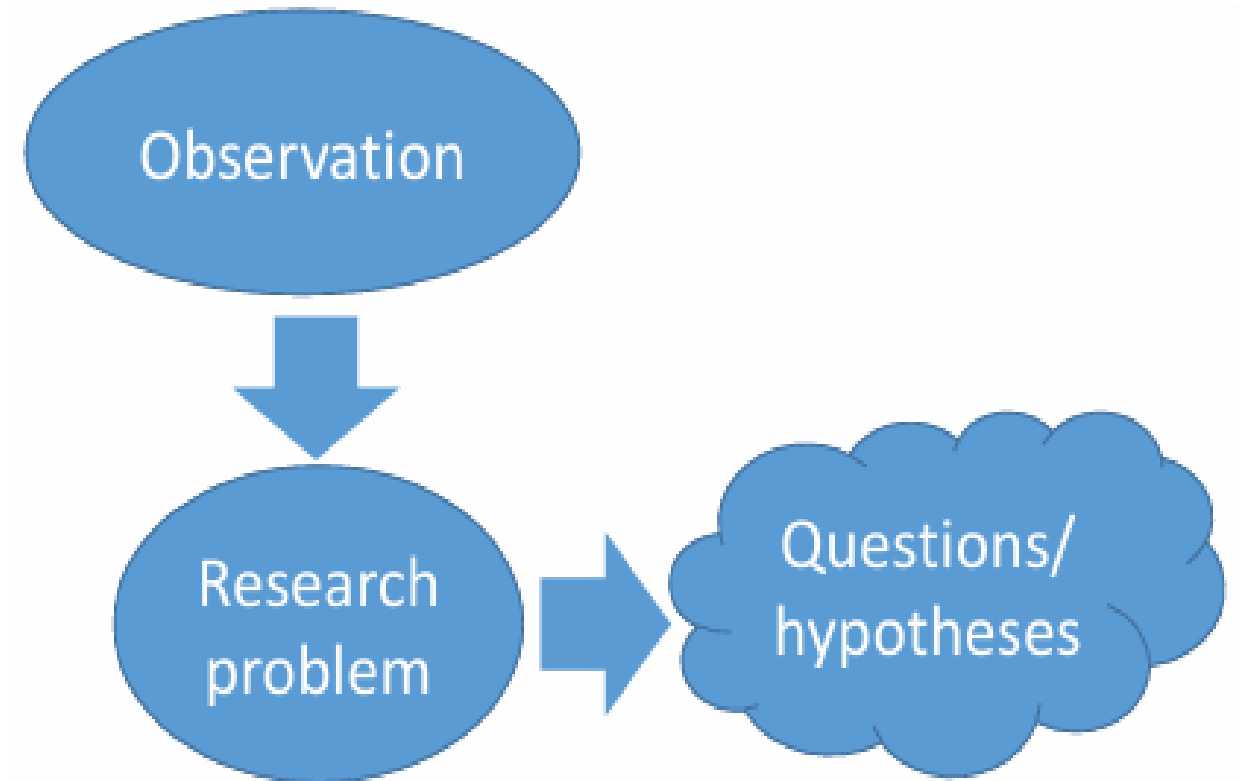
✓ Ears

✓ Nose

Use your sense organs to identify research problems



Techniques to identify a research problem





Techniques to identify a research problem



Questions/ hypotheses

1. When did the problem occur?
2. Is the problem worth solving?
3. What possible research problems can we establish from this picture?



Techniques to identify a research problem

- ❑ **Problem statement:** is a precise, clear, and focused description of the specific issue that requires investigation within a research study. It identifies the gap in knowledge, explains the context of the issue, and justifies the need for the research.
- ❑ Given as a single statement in a simple, clear, and direct language
- ❑ Usually takes one paragraph, approximately 25% of a page



Techniques to identify a research problem

Problem statement

Previous studies on flooding in Dar es Salaam have examined flood impacts and high-risk areas, but none have developed an effective early-warning system for the Msimbazi River. As a result, communities continue to suffer repeated loss of life and property. This study addresses this gap by proposing a deep-learning-based early-warning system to predict floods and alert residents in advance.





Techniques to identify a research problem



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Techniques to identify research Problem

2. Literature review

LITERATURE REVIEW

Generate a research problem through extensive review of scientific papers



□ Tips when finding **research gap** through literature review: Locate sections of the paper with

1. Limitations,
2. Future directions,
3. Conclusions,
4. Recognize weaknesses in methods
5. Results sections



Techniques to identify research problems

2. Literature review

1.8. Limitations and Future Work

First and far most limitation of current study is its generalizability of the results. This research was conducted in a region which is constantly growing in a mobile phone penetration rate, and besides that, data were collected from the universities which have high penetration rate for mobile phones. Therefore, the results of this study cannot be generalized on the other countries which are not advanced in technology. Secondly, most of the data were collected from postgraduate students with an average age of 26 years, therefore, our audience was educated. Hence, results of this study might not be same for the audience who are using general or public libraries or to those people who are less educated and much older. Thirdly, our research specifically targeted MLA i.e. INSIGNIA ILS. In future, our proposed model can be used and extended to check the acceptance of technology in variety of different domains e.g., Government of Punjab. Pakistan is constantly investing huge amount of money in technology sectors like e-health, e-learn Punjab, e-ticketing, e-complaint cell and e-challan and lot more (Rafique et al., 2018). Therefore, there is need to investigate the acceptance of those technologies which are consuming vast amount of budget to facilitate the intended users. Finally, our research included habit and system quality as a predictor, which are integrated into TAM because of its theoretical perspective nature. Future research will help us to identify other factors in e-service quality which might help in improving the applications according to the user's perspective. E-service quality is of vital importance and it yet needs to be explored.



Techniques to identify research problems

3. Personal Experience

A research problem can also come from your own daily life, observations, or work-related challenges.



Techniques to identify research problems

SCHOLARLY INTERACTIONS WITH COLLEAGUES

Through these interactions, you can discover research problems by:

4. Scholarly Interactions with Colleagues



Attending seminars, conferences, and workshops, where experts highlight unresolved issues



Thank you