



TASK 4 – RESEARCH SKILLS 3
**Definition of objectives and the importance of a
doctoral thesis in evaluating their compliance
with SMART criteria**

Field:
Cybersecurity

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Research Skills (3)

Task 4

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Ladies and Gentlemen,

Today I am presenting Task 4 concerning the definition of objectives and the importance of a doctoral thesis, as well as the evaluation of their compliance with SMART criteria.

My doctoral thesis is entitled:

"Detection and Prevention of Cyberattacks in Critical Networks in the Comoros: An Evaluation of Artificial Intelligence-Based Security Mechanisms and Their Impact on Network Resilience."

This title now explicitly includes the main variables:

- Independent variable: Artificial intelligence-based security mechanisms
- Dependent variable: Critical network resilience

It also introduces a notion of scientific doubt through the term Evaluation, which corresponds to the methodological remark previously received.



1. Difference between objectives and importance of the study

Before presenting my own objectives, it is essential to clarify the difference between objectives and the importance of a study.

Objectives answer the question:

➤ What does the research seek to accomplish?

They describe the expected results and the scientific actions to be undertaken.

Importance, on the other hand, answers the question:

➤ Why is this research necessary?

It justifies the scientific, social, economic, or strategic value of the study.

In summary:

- Objectives are oriented towards scientific action.
- Importance is oriented towards justification and added value.

2. Presentation of the objectives of the thesis

General Objective

Evaluate the effectiveness of artificial intelligence-based cyberattack detection and prevention mechanisms in improving the resilience of critical networks in the Comoros.

Specific objectives

1. Identify the main vulnerabilities of Comorian critical networks.
2. Analyze the most frequent types of cyberattacks targeting these infrastructures.
3. Examine existing detection and prevention solutions.
4. Design an improved model based on artificial intelligence.
5. Measure the impact of this model on network resilience.

3. Verification according to SMART criteria

The objectives must comply with the SMART framework:

✓ **S – Specific**

The objectives clearly target critical networks in Comoros.

✓ **M – Measurable**

Effectiveness and resilience can be measured through indicators:

detection rate

response time

reduction of incidents

✓ **A – Achievable**

Technical and methodological resources are accessible.

✓ **R – Relevant**

The cybersecurity of critical infrastructures is a national and international strategic priority, notably according to the recommendations of the National Institute of Standards and Technology.

✓ **T – Time-bound**

The research will be conducted over a defined doctoral period, with successive phases of analysis, design, and validation.

Thus, the objectives fully adhere to the SMART methodology.

4. Importance of the thesis

This research has importance on several levels:

☐ **Scientific importance**

It contributes to the literature on cybersecurity of critical infrastructure in a little-studied context, that of small island states.

☐ **Strategic importance**

Energy networks, telecommunications, and government systems are essential to national stability.

☐ **Socio-economic importance**

A successful cyberattack could disrupt electricity, communications, and public services

☐ **Security importance**

It contributes to strengthening the digital sovereignty of the Comoros

5. Importance and proposed objectives

Proposed Enhanced Objective

Develop and validate an adaptive intelligent model for detecting and preventing cyberattacks capable of significantly improving the resilience of Comorian critical networks.

Proposed Importance

This research aims to fill the gap of empirical studies on the cybersecurity of critical infrastructures in small developing states, while proposing a technological framework applicable to the Comorian context.

In conclusion, the clear definition of the objectives and the importance of a doctoral thesis is an essential step to ensure the scientific and strategic coherence of the project.

Through the explicit integration of variables in the title, the SMART formulation of objectives, and the clear justification of the study's importance, this thesis meets the methodological academic requirements expected at the doctoral level.

Thank you for your attention.
Wa Billahi Tawfiq.

Reference Frameworks

- 1) Research Skills Course 3 (2026) concerning: Objectives and Importance of Research
Dr. Saniya Sabaa
Midocean University
- 2) National Institute of Standards and Technology (2018). Cybersecurity Framework.
- 4) Stallings, W. (2018). Computer Security: Principles and Practice.
- 5) Whitman & Mattord (2021). Principles of Information Security.
- 6) ALI MMADI, researcher and Head of Networks and Information Systems Security at the National Electricity Company of Comoros (SONELEC)



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Thank You

