

ISHReCA Grant Writing Module 2:

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The Problem Statement or Statement of the Problem or Needs Assessment



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Did you know?

- Ideally a title should be born out of a problem statement
- An abstract should be a summary after the problem has already been dealt with.
- The problem statement oftentimes the first part to be read with **scrutiny** by reviewers.
- Establish a **persuasive context** for what follows.
- **“What is the problem”? And “why is this problem worth my attention”?**

What is the problem statement?

- A **problem statement** is a **clear concise** description of the issue(s) that need(s) to be addressed by a **problem solving team**.
- It is used to **center** and **focus** the team at the beginning, keep the team **on track** during the effort. &
- It is used to **validate** that the effort delivered an outcome that solves the **problem statement**.

What is the problem statement?

- A "**Problem Statement**" is a description of a difficulty or lack that needs to be solved or at least researched to see whether a **solution** can be found.
- It can also be described as either a **gap** between the **real** and the **desired** or a **contradiction** between principle and practice.

The Problem Statement

- The problem statement is a **key element** of a proposal
- The problem to be addressed should not only be **clear** and **concise** but also **well-supported**
- The information provided should be both **factual** and **directly related** to the problem addressed by the proposal

What is a good problem statement?

- A good problem statement is just **one sentence** (with **several paragraphs of elaboration**).

- Example:

"The frequency of job layoffs is creating fear, anxiety, and a loss of productivity in middle management workers."

Problem Statement: Good Example

- Accompanied paragraphs should elaborate on the problem by:
 - presenting persuasive arguments that make the problem **important** enough to study.
 - Respecting the **opinions** of others (politicians, futurists, other professionals);
 - explaining how the problem **relates** to business, social or political trends via presentation of data that demonstrates the scope and depth of the problem.
- A well articulated problem statement establishes the **foundation for the proposal**
 - Avoid conceptual, theoretical and methodological obstacles typically encountered during proposal development.

Problem statement: Key elements

Problem statements often have three elements:

1. The **problem itself**, stated clearly and with enough contextual detail to establish why it is important
 2. The **method** of solving the problem, often stated as a claim or a working thesis
 3. The **purpose**, statement of objective and scope of the project being proposed.
- These elements should be **brief** so that the reader does not get lost. **One page max**

Elements of the Problem Statement

- The purpose for developing the proposal
- The Beneficiary--who are they and how will they benefit?
- The nature of the problem--provide as much hard evidence as possible
- How the applicant organization came to realize the problem exists, and what is currently being done about the problem
- Most importantly, the specific manner through which the problem might be solved

Problem Statement: Bad Example

- “**Everybody wants to go to heaven but nobody wants to die**”.
- Dying looks like a problem that needs a solution yet there is **no possible solution** to it. People must die.
- A research on how people can live forever makes little or no sense.
- If a situation has **no possible solutions** then it makes little or no sense expending resources researching it.

Purpose of a Problem Statement

- Introduce the reader to the **importance** of the **topic** being studied.

The reader is oriented to the significance of the study and the research questions, hypotheses, or assumptions to follow.

- Place the topic into a particular **context** that defines the parameters of what is to be investigated.

- Provide the framework for reporting the results

indicates what is probably necessary to conduct the study and explain how the findings will present this information.

Source of problem statements

Good sources of research questions that are converted to problem statements originate from:

- **Observation** of the reality.
- **Literature review** of previous experiments and research,
 - Previous researcher that generated some interesting results, but never followed up.
 - An interesting area of research, which nobody else has fully explored.
- The research question is formulated and then restated in the form of a statement that notes the adverse consequences of the problem.

How to write a problem statement

Pose questions such as:

- **What "should" be occurring?**

(For example: Africa's R&D budget would be (xy) Billion dollars should African leaders respect internationally agreed R&D funding accords).

- **What is occurring?**

(For example: A recent survey reported that <5% of African countries are investing the required percentage GDP in research)

- **What could happen if the problem is not addressed?**

(For example: persistent low commitment of African leaders would thwart international efforts so far invested and result to worsening situations that need urgent attention like widespread food insecurity and poor health systems that may lead to more violence and weaker governments)

How important is the problem?

- **Is the problem of current interest? Is it topical?**
- Is the problem likely to continue into the future?
- Will more information about the problem have practical application or a theoretical importance?
- How large is the population affected by the problem?

How important is the problem?

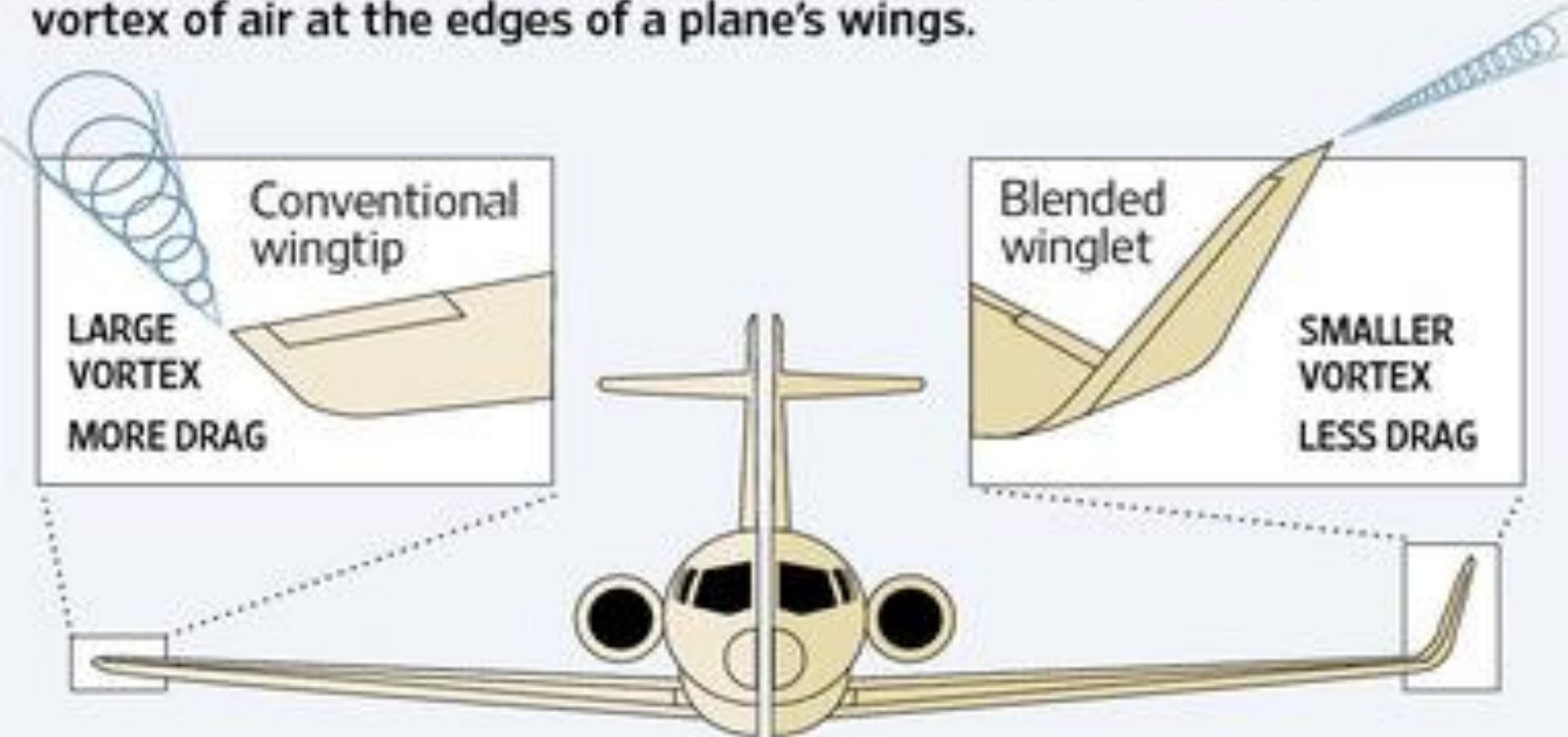
- How important, influential, or popular is this population?
- Would this study substantially revise or extend existing knowledge?
- Would this study create or improve an instrument of some utility?
- Would research findings lead to some useful change in best practice?

How important is the problem?

- Persuasively indicate that major variables can be measured in some meaningful way.
- The problem statement could close with a question.
 - Should typically contain two variables, a **measurable relationship**, and some indication of population.
 - If the literature **cannot** answer the question, the research is **needed** to do so.

Diminished Resistance

Winglets cut drag, and boost fuel efficiency, by shrinking the vortex of air at the edges of a plane's wings.



Source: Aviation Partners

The Wall Street Journal

Good Example . (1/3)

Problem and its context

- A recent trend in the design of new aircraft is the addition of winglets, which are small fins attached to the ends of the main wing.
- After an aircraft has taken off and is cruising, winglets improve its performance by reducing the drag caused by the main wing.
- However, during the critical stages of aircraft takeoff and landing, the winglets cause two problems.
 - First, they cause vibrations in the main wing, commonly called buffeting.
 - Second, they cause the aircraft to lose some control of yaw, the motion of the nose right and left. In a study funded by NASA [Ref. 2], the main wing of a DC-10 transport aircraft was outfitted with winglets, and it experienced significant buffeting during takeoff and landing.

--Tan T. Trinh, "Winglets at Takeoffs and Landings"

Good Example . (2/3)

Approach of the current research

- In our current project, we examine winglet-induced buffeting in three wing designs. We record buffeting and yaw under experimental wind-tunnel takeoff and landing conditions for:
 - (1) a wing without winglets,
 - (2) another wing with conventional winglets, and
 - (3) a wing with spheroid winglets.
- Our objective is to determine the degree to which differences between load lifts on the wings and their winglets during takeoff and landing are causing the performance problems we have described.

--Tan T. Trinh, "Winglets at Takeoffs and Landings"

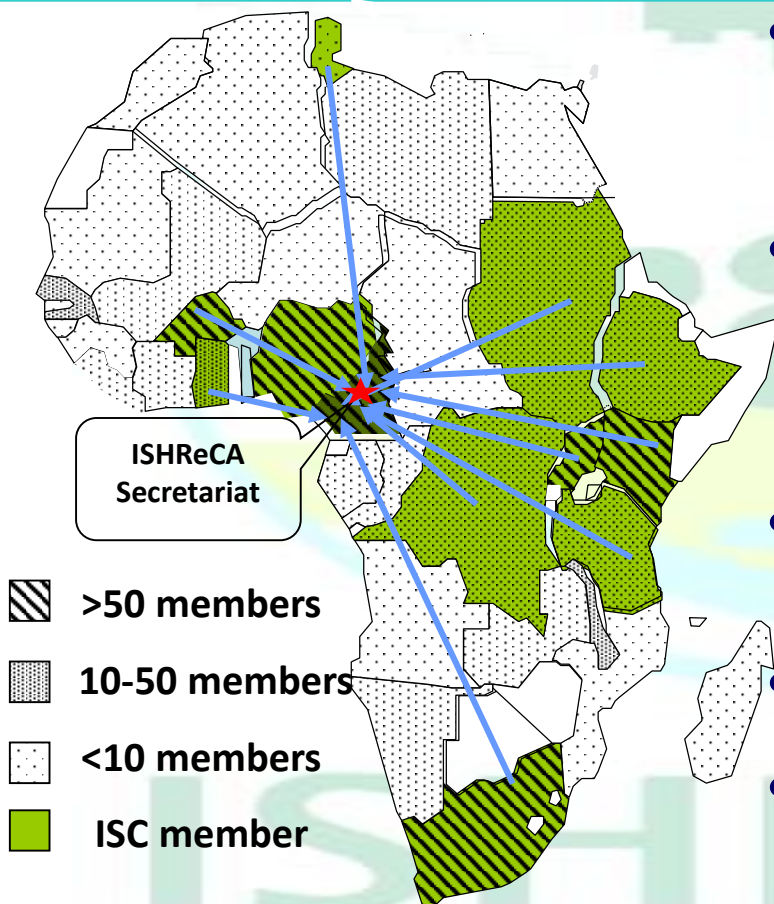
Good Example 2. (3/3)

Purpose and scope of current document

- In this study, we develop theoretical models of winglet load lifts and compare these to the lifts of wings and winglets actually recorded during testing conditions.

--Tan T. Trinh, "Winglets at Takeoffs and Landings"

ISHReCA's Development



- African-led initiative born in 2007 out of consultation between African researchers and research funders.
- Membership ~1800 African health researchers and policy makers from 43 countries connected through LISTSERV and e-forum, managed by an ISC.
- From WHO/TDR, Secretariat has been devolved to its new host UYI.
- Registered Association in Cameroon.
- Guest Seminars & Workshops ..
Situational Analysis in Central Africa

Supporting ISHReCA are:

wellcometrust

NWO
Netherlands Organisation for Scientific Research
WOTRO Science for Global Development

Sida

SKMRC
South African Medical Research Council
BUILDING A HEALTHY NATION THROUGH RESEARCH

TDR
For research on diseases of poverty
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Way forward.

- Provide feedback on the appropriateness of slides by mail ishreca@gmail.com or Masumben@gmail.com

Merci pour votre participation

