SUSTAINABLE URBAN REHABILITATION IN VULNERABLE HISTORIC CONTEXTS

THE UNIVERSITY OF ARIZONA
College of Architecture, Planning & Landscape Architecture

EVALUATING ALTERNATIVE INTERVENTION STRATEGIES FOR WALKABILITY, SAFETY, AND ENVIRONMENTAL QUALITY IN CALLAO'S HISTORIC CENTER

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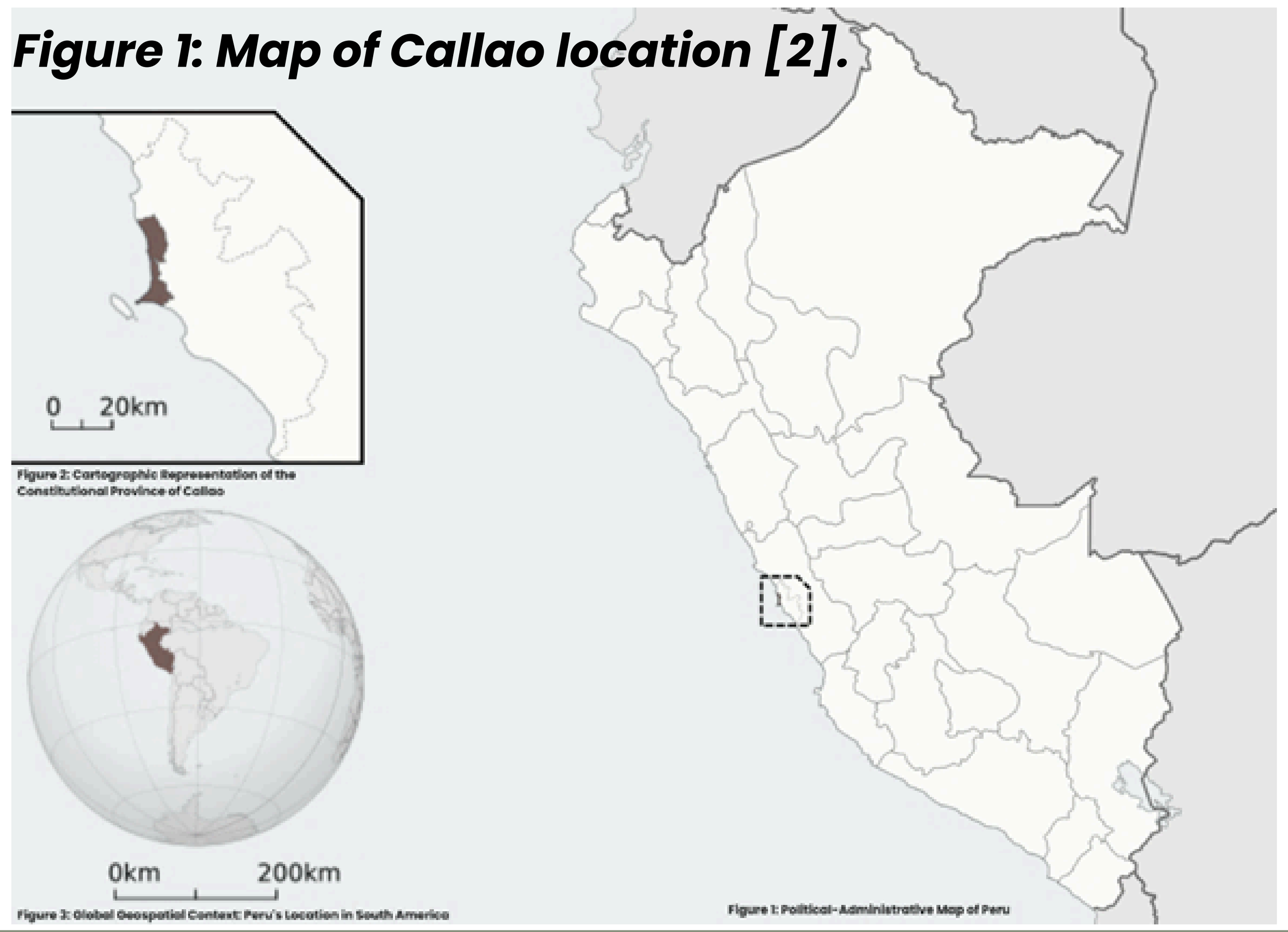
INTRODUCTION

The Historic Center of Callao, Peru, faces physical deterioration, high crime rates, and decades of failed rehabilitation attempts, creating urgent need for effective intervention strategies [1].

Figure 1: Map of Callao location [2].



RESEARCH QUESTION

How do alternative urban rehabilitation strategies differ in their perceived effectiveness in relation to walkability, safety, environmental quality, and viability in the Historic Center of Callao?

METHODS

Qualitative Approach

Method 1: Semi-structured interviews ① *(N=10)* — Gather practical insights from local actors regarding current conditions, priorities, barriers, and aspirations.

Method 2: Focus groups ② *(N=6)* — Validate feasibility, technical risks, and criterion weighting; refine intervention alternatives through professional critique.

Method 3: Score cards ③ — Measure and compare rehabilitation strategies across predetermined walkability, safety, and environmental quality criteria to enable standardized evaluation.

RESULTS

① Method 1: Semi-structured interviews

Table 1: Semi-structured Interviews Results - Current Conditions Assessment

Topic	Key Findings
Walkability and Infrastructure	Severely deteriorated pedestrian infrastructure with systematic deficiencies across the intervention area
Safety Perception	High insecurity perception validates diagnostic data, 80% of residents identify safety as primary concern
Environmental Quality	Critical deficit in green spaces and environmental amenities confirmed by participants

Table 2: Semi-structured Interviews Results - Rehabilitation Strategies Evaluation

Topic	Key Findings
Strategy Effectiveness	Division between ideal impact (A3) and practical impact (A2), with A1 considered insufficient by the most
Strategy Feasibility	Strong consensus that feasibility decreases dramatically from A1 to A3, but concerns about whether feasible solutions are actually effective
Priority Elements	Strong agreement on specific interventions that must be included regardless of overall strategy selection

② Method 2: Focus groups

Q1: Most Appropriate Alternative (Professional Experience)
Strong consensus emerged around A2 as the most appropriate alternative, balancing technical soundness with contextual realities

Q2: Safety Through Environmental Design (CPTED Principles)
Participants evaluated each alternative's ability to address the 80% insecurity concern through natural surveillance, territoriality, and activity generation

Q3: Budget Justification to Mayor (Political Feasibility)
This question generated the most debate, revealing tension between technical quality and political reality

Q4: Surviving Government Change (Institutional Sustainability)
Participants applied lessons from Peru's political instability and interrupted projects across the country

③ Method 3: Score cards

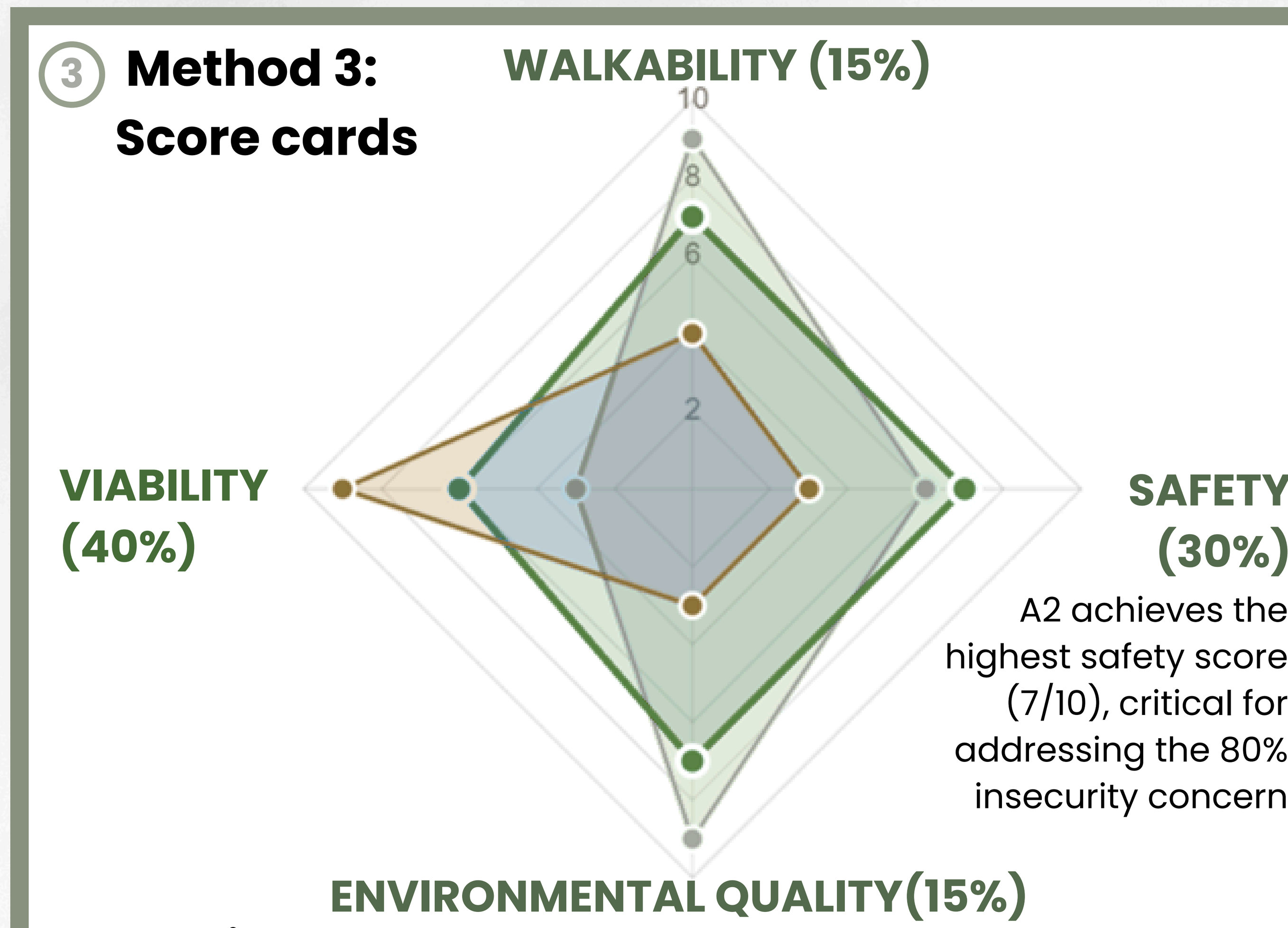


Figure 2: Radar chart with scorecard results

A1 (Tactical)
5.55
Ranking: 3°
A1 scores highest in viability (9/10) but critically underperforms in impact dimensions

A2 (Intermediate)
6.6
Ranking: 1° - RECOMMENDED
A2 demonstrates the most balanced performance across all dimensions with the highest total score (6.6)

A3 (Comprehensive)
5.7
Ranking: 2°
A3 excels in walkability and environmental quality but suffers from low viability (3/10)

CONCLUSION

Main Finding: Perceived effectiveness depends on two interdependent factors: capacity to address safety + institutional credibility

1 SAFETY AS PRIMARY CRITERION
Strategies without safety impact = **perceived as ineffective** (regardless of technical quality)

2 CREDIBILITY AS MULTIPLIER
Modest interventions = aligned with municipal capacity → **credible and effective**

KEY IMPLICATION
Optimal effectiveness = balance between safety impact + achievable scale

Non-linear relationship:
Greater technical ambition ≠ Higher perceived effectiveness

RECOMMENDATION

KEY PRINCIPLE
Balance **safety impact** with **achievable scale** to build credibility through demonstrated results.

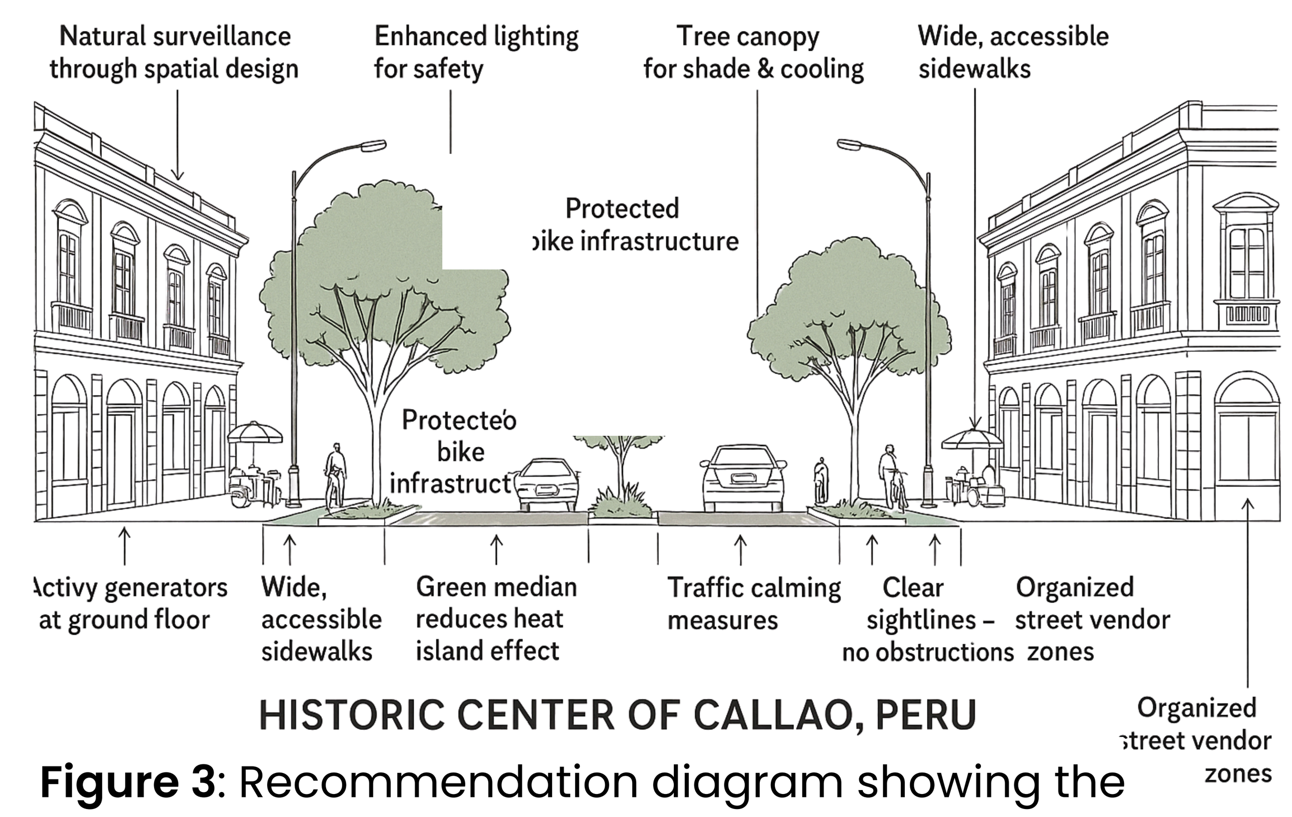


Figure 3: Recommendation diagram showing the intervention strategy

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[1]. Instituto Metropolitano de Planificación. (2020). PDM Callao 2040: Propuesta 1.1. Scribd. https://es.scribd.com/document/883141178/PDM-CALLAO-2040-PROPUESTA-1-1

[2]. Reyes, E. (2005). Distrito del Callao [Imagen]. Wikipedia. https://es.wikipedia.org/wiki/Archivo:DISTRITOCALLAO.png