



# Propositions

attached to the thesis

## **Evidence-Based Optimization in Humanitarian Logistics**

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## I

Effectiveness increase realized by advanced planning and routing approaches is marginal in many humanitarian contexts - due to triviality of planning problems, data issues, and/or external constraints - whereas costs increase can be substantial.

*Chapter 2*

## II

Enhancing continuity of access to healthcare for African truck drivers and increasing their healthcare utilization substantially improves health outcomes. Proper network design yields networks of roadside healthcare facilities that are close to optimal in terms of both criteria.

*Chapter 3*

## III

Substantial improvements in equity of healthcare delivery among African truck drivers are attainable at marginal costs in terms of utilization and continuity of access. Designing networks that are close to optimal with respect to these three criteria can be done efficiently through column generation techniques.

*Chapter 4*

## IV

Exponential growth and decay models provide an adequate basis for estimating the effectiveness of population screening operations for sleeping sickness.

*Chapter 5*

## V

Basing screening frequencies for populations at risk on endemicity instead of following the WHO recommendation to assign (almost) the same frequency results in a substantial decrease of sleeping sickness prevalence.

VI

The added value of optimization techniques over simple, disease burden based planning of population screening for sleeping sickness is too small to justify costs increase.

VII

Literature on decision support tools for humanitarian operations generally fails to produce an internally and externally valid claim of effectiveness and a proper discussion of costs.

VIII

Adequately formulating a problem in humanitarian operations management is often more challenging than solving it.

IX

Many humanitarian contexts lend themselves weakly to sophisticated optimization techniques.

X

Moving from eminence-based decision making to evidence-based decision making is a key challenge for humanitarian organizations.

XI

Successfully doing a PhD is to waste your time well.