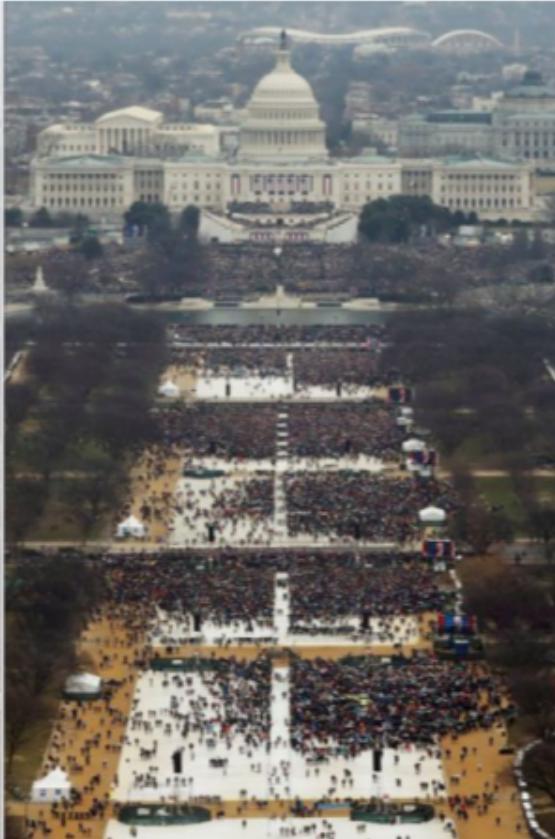


An Open Policy Analysis for Deworming Interventions

BITSS RT2

Fernando Hoces de la Guardia, BITSS
01 September 2021 | [slides](#)

Motivation: Rise of Alternative Facts



Senator 1 *discussing facts* on
unemployment insurance

Interviewer: "We I have looked at what economist are saying, and [...] there is no measurable evidence that people are staying at home because of [\$600 unemp. insurance]"

Senator1: "[scoffs] I don't know which economist you are talking about, but ..."



Senator 2 *discussing facts*
on costs of healthcare reform

Senator2: "...I don't think there is a study out there that does not suggest suggests that [proposed reform] is far less expensive than [status quo]"



Possible Mechanism: Opaqueness of Policy Analysis

- Incredible Certitudes (Manski, 2011)
- Report wars (Wesselink et al, 2013)

Low overall credibility of PA

- ↳ credibility based on reputation ("serious")
 - ↳ assignment of reputation varies across political positions

- Parallels to "Reproducibility Crisis" and Open Science reponse (Hoces de la Guardia, Grant, Miguel 2020). Propose:
 - Core principles for Open Policy Analysis (OPA) in output, analysis and materials
 - Agenda to implement and document how OPA can be applied into several policy issues
- Here we will review the application of OPA to mass deworming interventions

Deworming Interventions

- Parasitic worm infections are endemic in many countries, disproportionately affecting the poor
- They interfere with regular bodily processes by decreasing nutrient uptake and can thus lead to serious consequences on human health, education outcomes, and long-term economic well being
- Mass deworming interventions, at school level, have been proposed as a cost-effective approach to tackle this problem

Different settings for deworming

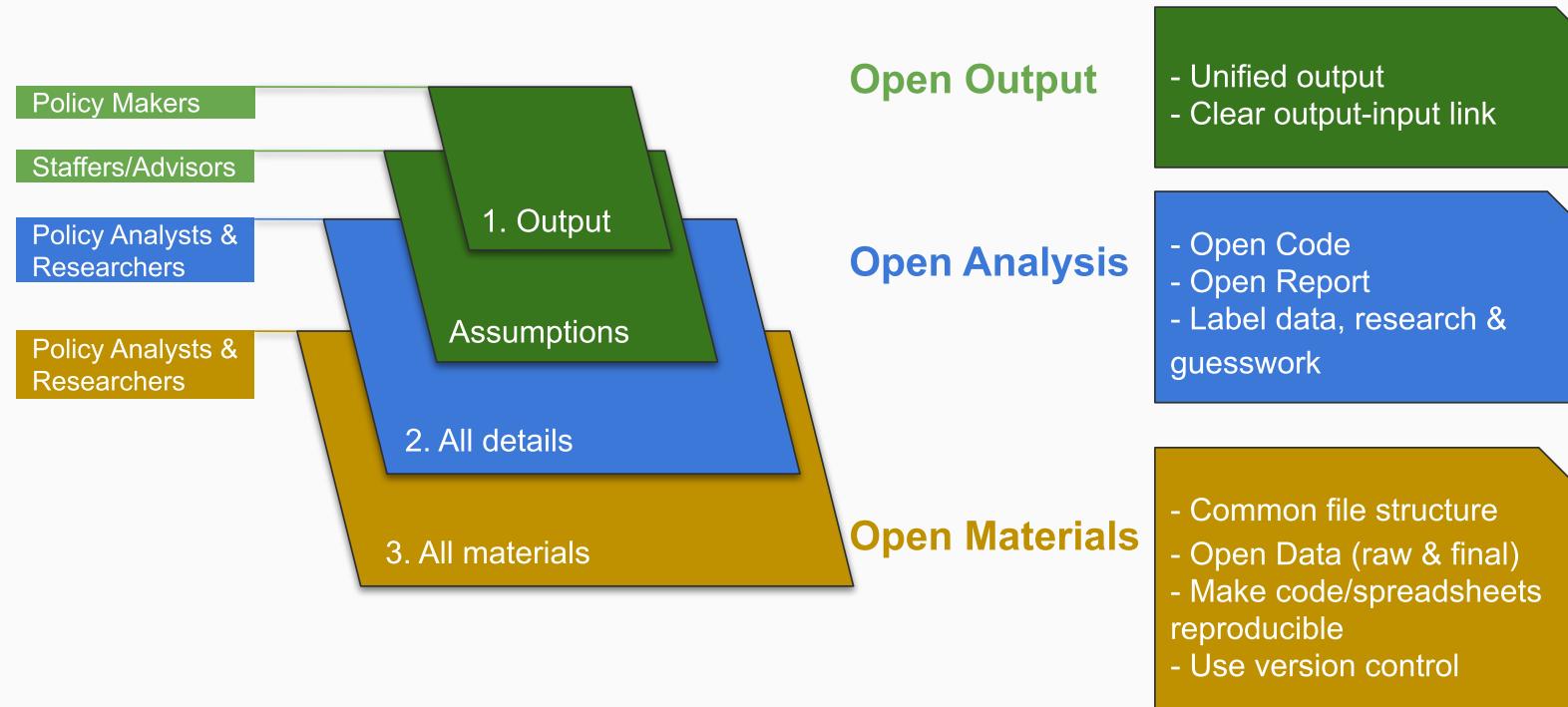
- Context of original study (Kenya, 1998-99) had very high prevalence rates of worm infections
- Implementation costs were very low (\$0.42 per round of treatment)
- Length of treatment was relatively short (2.4 years)
- Current deworming settings have lower prevalence rates, varying implementation costs and length of treatments

Strong debate around initial results

- Ozier (2020) summarizes differences between original findings (Miguel and Kremer 2004) and a re-analysis (Aiken et al, 2015). Emphasizes the role of communication of results in a reanalysis.
- This type of debate (result/re-analysis) can be seen in several other topics. For example: minimum wage, immigration, taxation.
- OPA need not guarantee agreement on key research finding, but should help avoid multiple policy reports

A Framework for Open Policy Analysis

Hoces de la Guardia,
Grant, Miguel (2020)

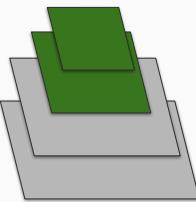


Contributions of OPA to deworming:

1. Selected one policy estimate among several alternatives and establish a clear link between it and underlying assumptions
2. Added documentation to increase reproducibility
3. Created a public repository with all materials for one-click reproducibility

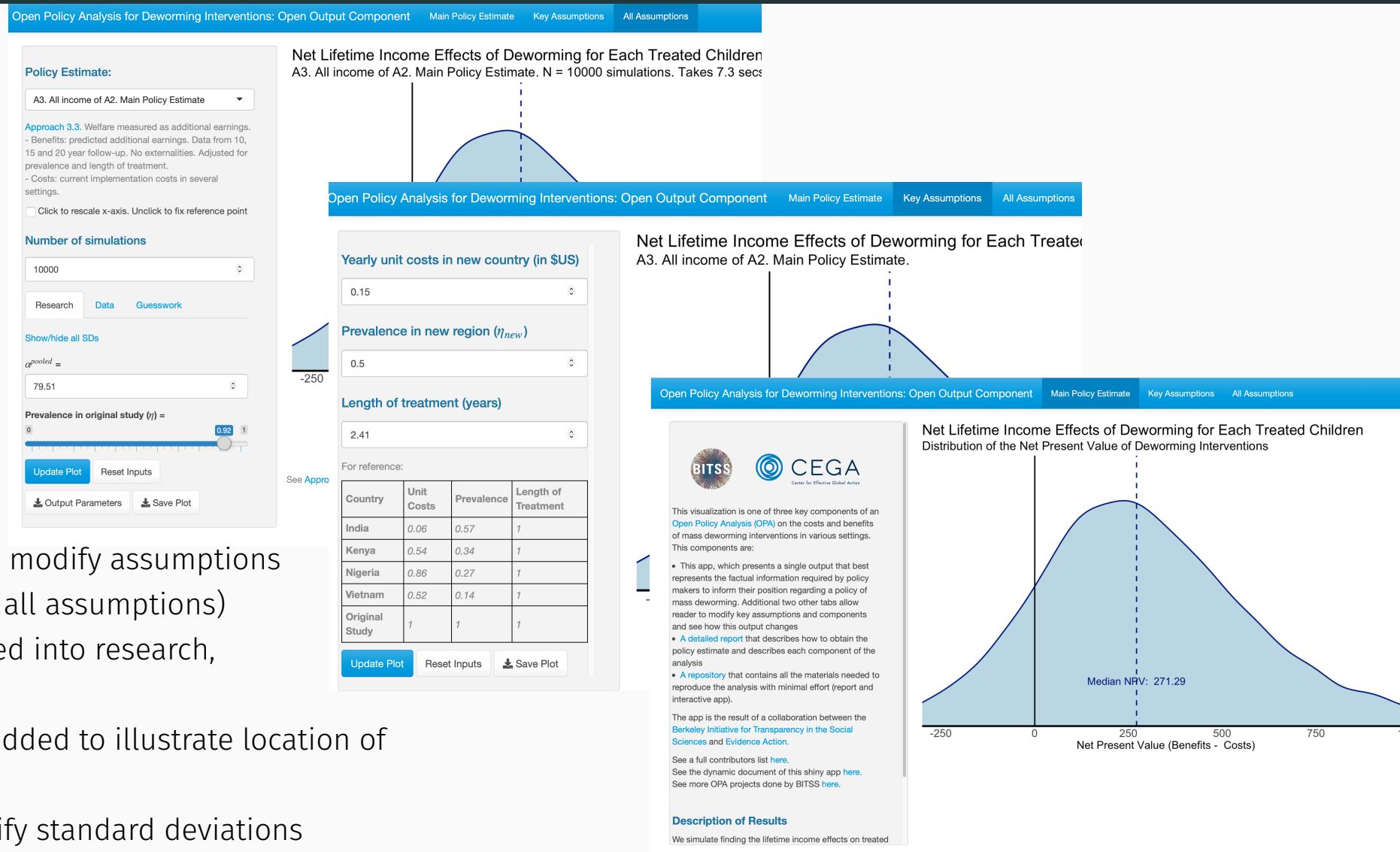
Open Output

Demo



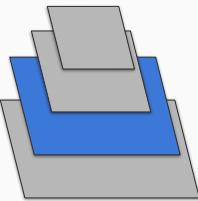
Main features

- One clear output previously agreed in consultation with policy partner
- Two additional tabs to modify assumptions (key assumptions and all assumptions)
- Each source is classified into research, data, or guesswork
- High level equations added to illustrate location of components
- Added feature to modify standard deviations
- Track values of each component



Open Analysis

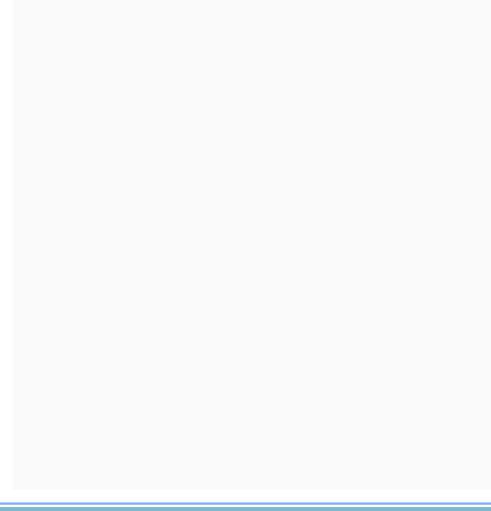
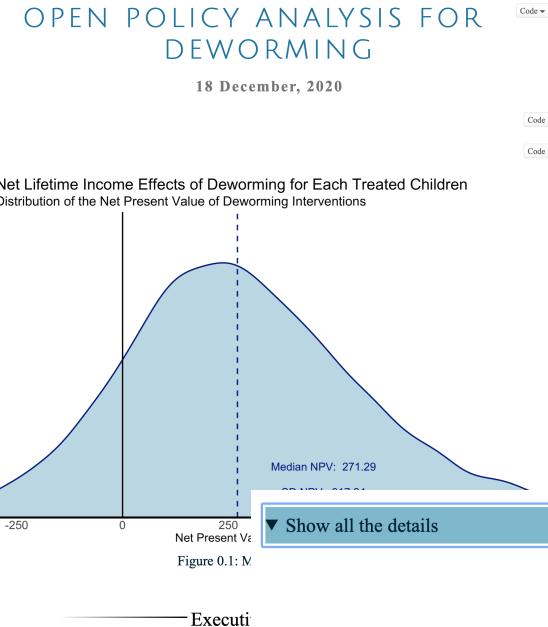
Demo



Main features

- Complete narrative description of the methodology
- Translation of each narrative step into an equation
- Implementation of each equation into code
- Combine all of the above into using a dynamic document (RMarkdown)
- Presentation of narrative, equations, and code in layered fashion to avoid overwhelming the reader
- Icon figure

BITSS CEGA
Open Policy Analysis
1 Introduction
2 Methodology
3 Main Results
References



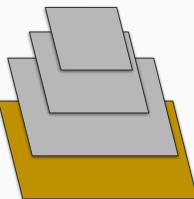
Where:

- E_t : earnings individuals are expected to generate at period t
- r : real interest rate as the discounting rate
- t : period t. Period 0 represents time of intervention. Individuals are assumed to enter the labor market 9 years after treatment.

```
# - inputs: stream earnings, discounting rate, number of periods
# - outputs: function that computes the present value of benefits
chunk_benefits <- function(){
#####
pv_benefit_f <- function(
  earnings_var = earnings_in,
  interest_r_var = interest_in,
  periods_var = periods_so
) {
  index_t <- 0:periods_var
  res1 <- sum( ( 1 / (1 + interest_r_var) )^index_t * earnings_var )
  return(res1)
}
```

Open Materials

Demo



Main features

- One-click reproducible documentation and app
- Extensive readme files
- Clear folder structure
- Version controlled
- Open data
- Acknowledgment to all contributors

BITSS-OPA / [opa-deworming](#)

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

master 21 branches 1 tag Go to file Add file Code

fhoces Change title of readmen file 53bb6f1 1 minute ago 728 commits

.binder update install.R 2 months ago

code Merge branch 'master' of <https://github.com/fhoces/opa-deworming> 1 hour ago

data

docs

rawdata

.gitignore

contributors.R

contributors.csv

opa-deworming.Rproj

readme.Rmd

readme.md

readme.md

Open Policy Analysis of Deworming

BITSS BERKELEY INITIATIVE FOR TRANSPARENCY IN THE SOCIAL SCIENCES

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OPEN PO

BITSS CEGA

Open Policy Analysis

1 Introduction
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Net Lifetime Income Effect
Distribution of the Net Present

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Lessons for future OPA projects: Costs

- Costs (approx bandwidth over a year at full time):
 - Principal Investigator 30-50%
 - Research assistant/programmer 100-150%
 - Program Manager 20%-30%
 - Original researcher: 1-5%
- Not all policy analysis justify this level of effort
- Characteristics that might justify an OPA:
 - Topics with strong disagreement on the facts among analysts
 - Recurrent reports (eg. ex-ante economic analysis from development banks/agencies)
 - Topics that have large expected welfare effects (eg. tax reform, social cost of carbon)
- With each new OPA project, templates will emerge and costs will likely fall

Additional Benefits of OPA

Easy to update and reuse

After deworming OPA is released, anybody can modify and improve into a newer version

Clearer connection of how evidence from research is used in policy analysis

Researchers can see clearly where their estimates are being used in a policy analysis. For example, the OPA can be used to justify power calculations of potential new studies.

Connection with forecasting

When there is little information for a parameter used in an OPA, a forecasting exercise can be carried out to elicit expert knowledge (DellaVigna, Pope, Vivaldi 2019).