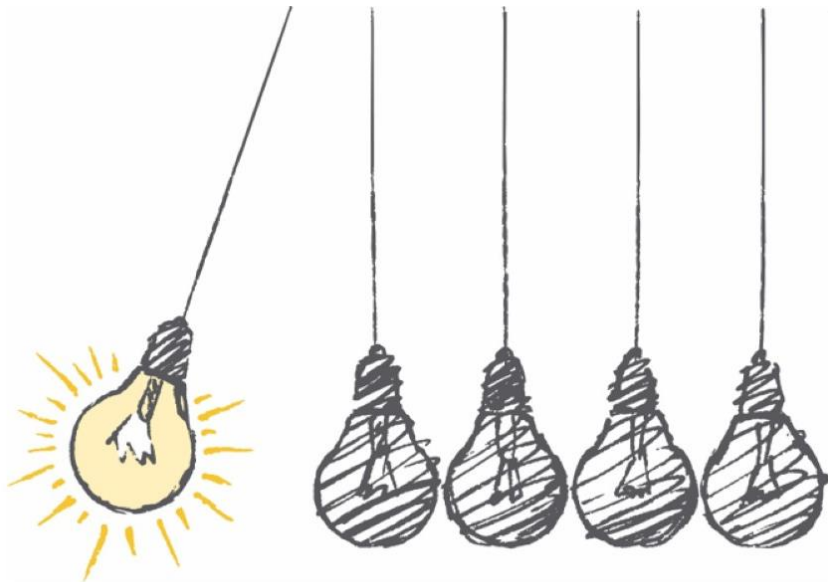


Administrative Data in Research at the World Bank

The Case of Development Impact
Evaluation (DIME)

Arianna Legovini and Maria Jones
World Bank





BUT I WANT HIM TO COME WITH US!!




DIME's driving idea

Move development practice

- from “expert advice”
- to “tested solutions”

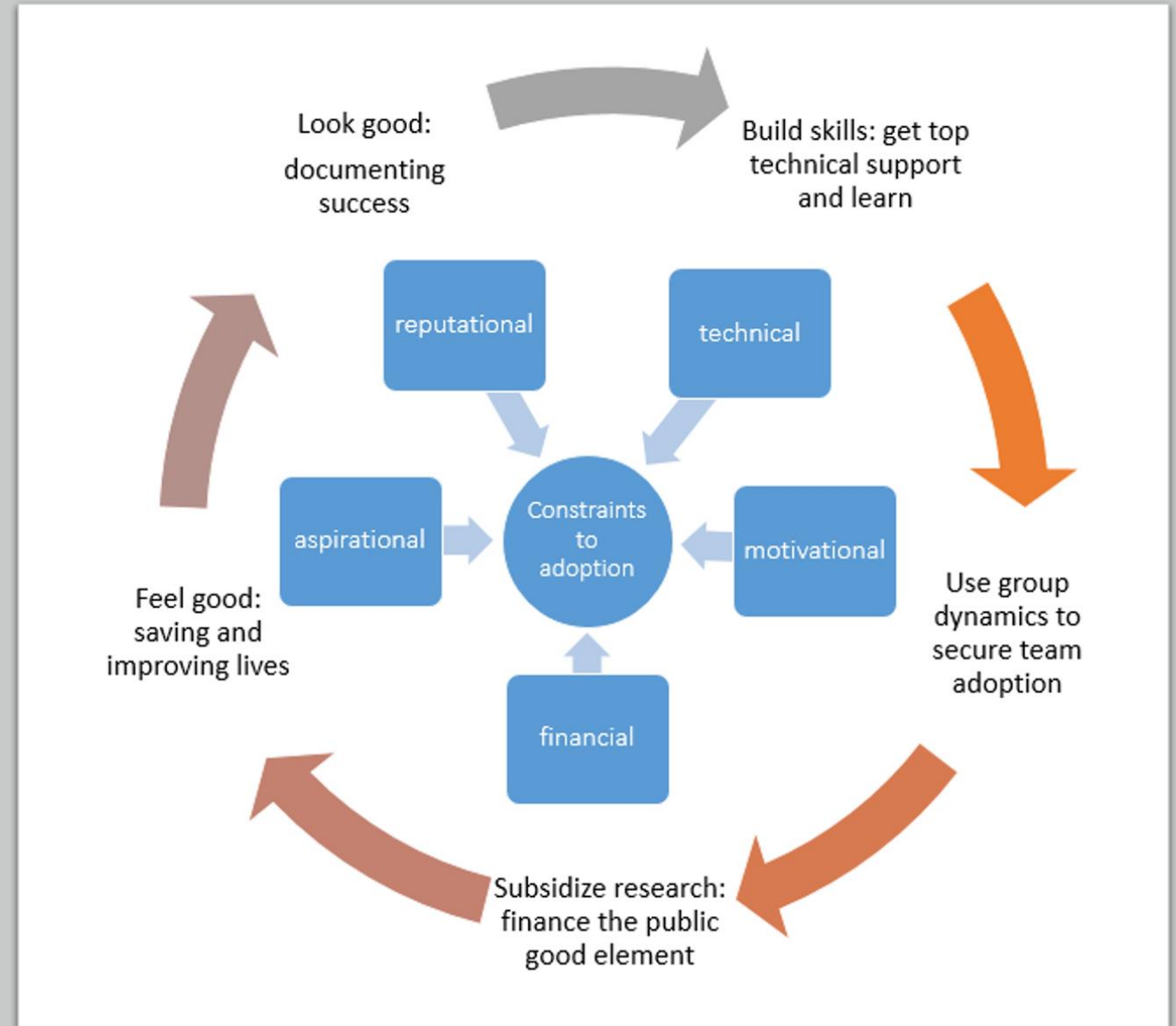
By focusing on building governments' capacities to:

- understand the problem
- ask the most important questions
- to collect data and monitor implementation
- operationalize results and put into action



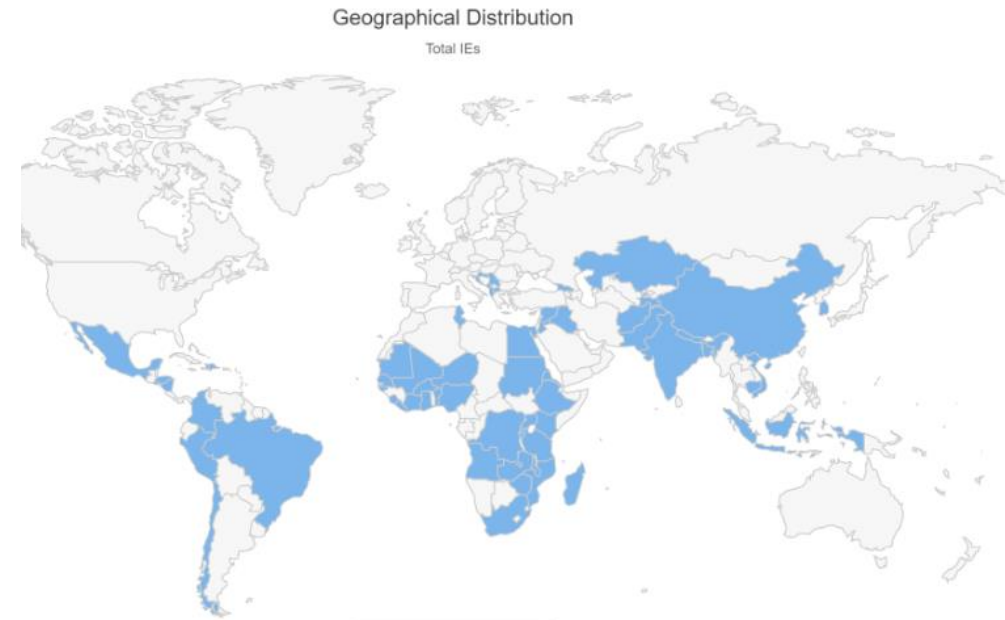
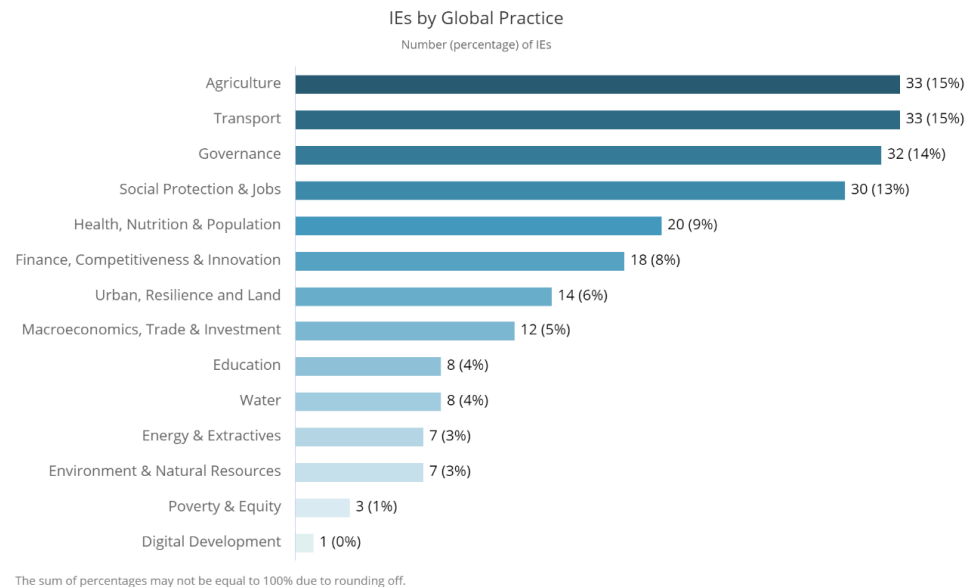
Our paradigm is not *access* to data but
creation of improved *capacity*
for generation and use of data

DIME model for adoption of data-and evidence- informed policy



DIME: a global research program

224 long-term collaboration with government agencies across 62 countries



2014-2020: USD200M research program shaping delivery of USD20B in development finance

Global leader in adaptive development research

- **{DATA}** Innovate in measurement & build data capabilities to understand the problem we are trying to solve
- **{AI}** Analyze data & find opportunities for targeting and prioritizing public resources and efforts
- **{IE}** Conduct randomized experiments to improve outcomes and evaluate interventions to document success & justify scale up



Administrative data at DIME

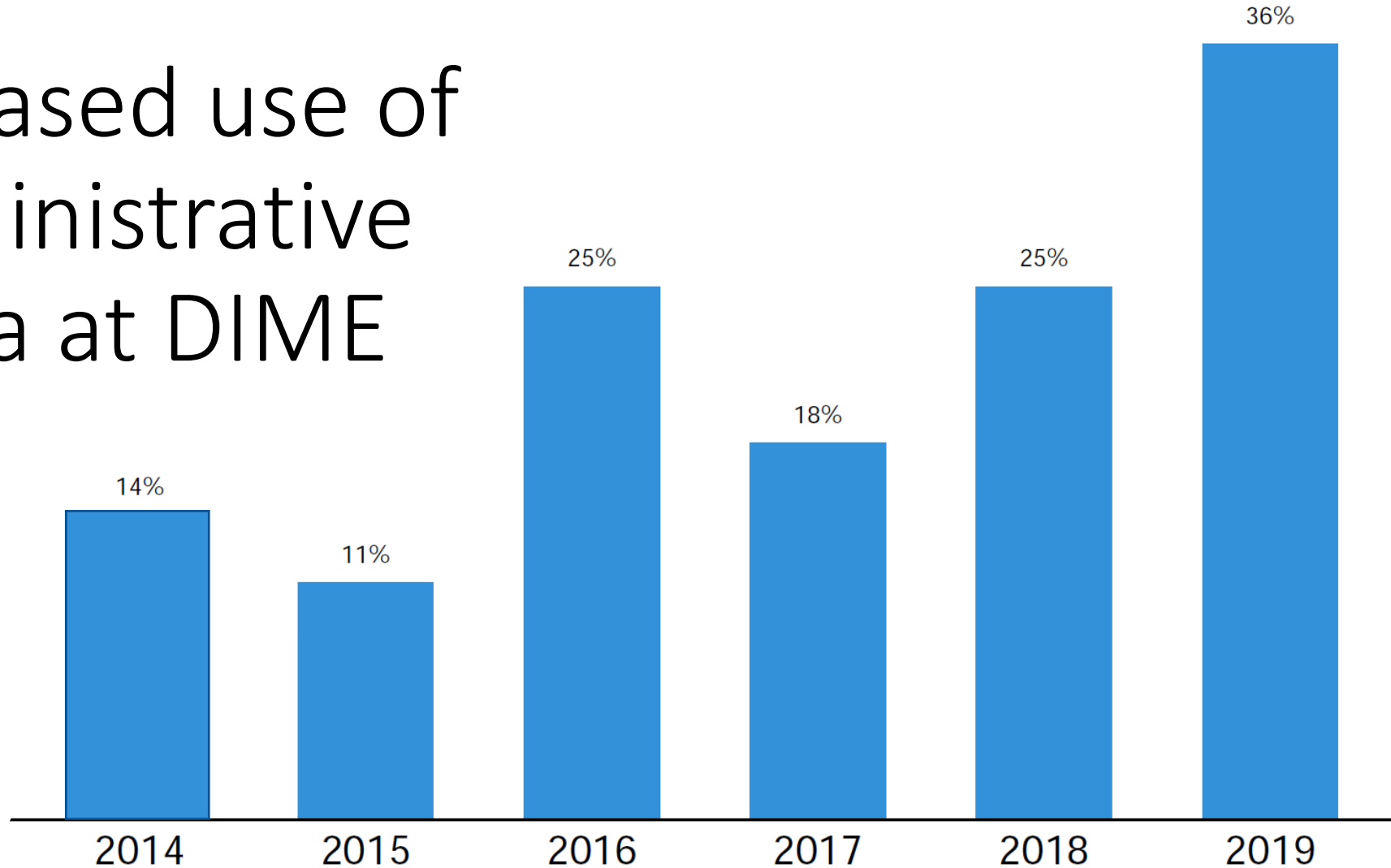


- Evaluating impact is a good organizing principle for constituting high-quality data sets
- Administrative data typically designed to monitor processes, which restrict use for policy analysis
- DIME combines an evaluative and capacity-building approach to access existing administrative data, integrate it with other existing or new data, to create high value-added analysis-ready datasets

DIME Impact Evaluations Using Administrative Data

Impact evaluations that collected administrative data by start year (%)

Increased use of administrative data at DIME



Year (number of eligible IEs): 2014 (21) 2015 (36) 2016 (20) 2017 (17) 2018 (20) 2019 (11). Analysis performed on IEs that started in a given year.



Case 1. Piloting New Administrative Data Systems: Patient Safety in Kenya

Guadalupe Bedoya (World Bank)

Jishnu Das (Georgetown U.)

Kenya Patient Safety Impact Evaluation

- No systematic data available on compliance with patient safety standards in health facilities
- DIME researchers piloted a high-stakes health inspection system in partnership with the Ministry of Health
- Trial demonstrated that inspections regime with clear rules, monitoring, and enforcement is effective at improving patient safety in public and private health facilities
- Proof of concept of the value of supporting governments in developing data systems to evaluate sector-wide reforms



Case 2. Digitizing Administrative Data: Kenya Road Safety

Guadalupe Bedoya, Arianna Legovini, Rob
Marty, Sveta Milusheva (World Bank)

Sarah Williams (MIT)

Nairobi: Mapping police crash data

- Scanned all police reports of crashes from all 15 wards in Nairobi (over 10,000 reports)
- Digitized reports, including crash characteristics and location of crash
- About 9,000 unique crashes geo-identified from 2011 to 2018

[Link to Dashboard](#)

Time

Date

Injury severity

Location

Direction of travel

Vehicle type

Cause code of crash used by police

Hospital taken to

Number of vehicles and Injuries

REF. TC/1/14/INDO/42./2017 27/6/2017 PD

SUBJECT SELF INVOLVED SERIOUS INJURY ROAD TRAFFIC ACCIDENT PD THIS OCCURED TODAY

27/6/2017 ABOUT 01.00 AM AT LUSAKA ROUNDABOUT INVOLVING M/V REG. NO. [REDACTED] V/W

PASSAT DRIVEN BY [REDACTED] PD IT HAPPENED THAT

THE SAID M/V WAS BEING DRIVEN FROM J.K.I.A. DIRECTION HEADING TOWARDS CITY CENTRE AND ON

REACHING AT YTHE LOCATION OF THE ACCIDENT , THE DRIVER LOST CONTROL OF THE M/V , AND HIT

THE PAVEMENT AND LANDED INTO ROUNDABOUT PD DUE TO IMPACT THE M/V GOT FIRE PD AS A

RESULT THE DRIVER SUSTAINED FRACTURES ON BOTH LEGS AND WAS TAKEN TO K.N.H. WHERE HE WAS


LEFT UNDERGOING TREATMENT PD SCENE VISITED AND M/V SHELL TAKEN TO THE STATION PD CAUSE

CODE - 26 USED PD CASE P.U.I. , D.T.O. INDO/AREA DEALING PD

BT

DRAFTER - PC KANDIE

FOR D.T.E.O. INDO/AREA



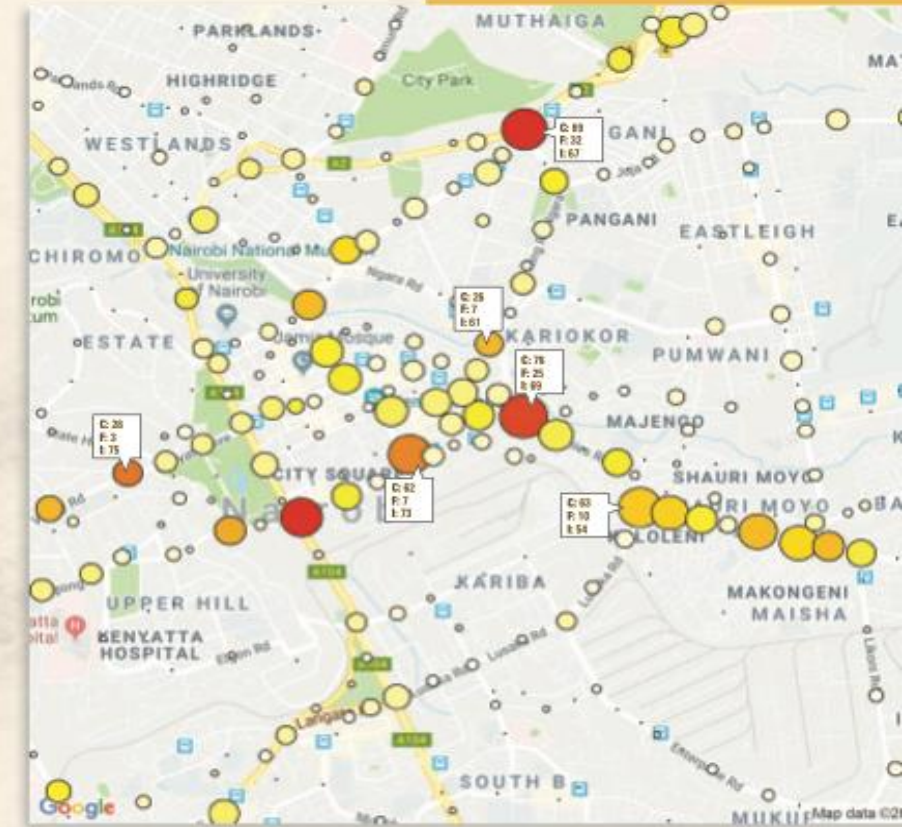
NAIROBI CRASH MAP

National Police Records (2012–2018)



71% of road traffic deaths are **pedestrians**

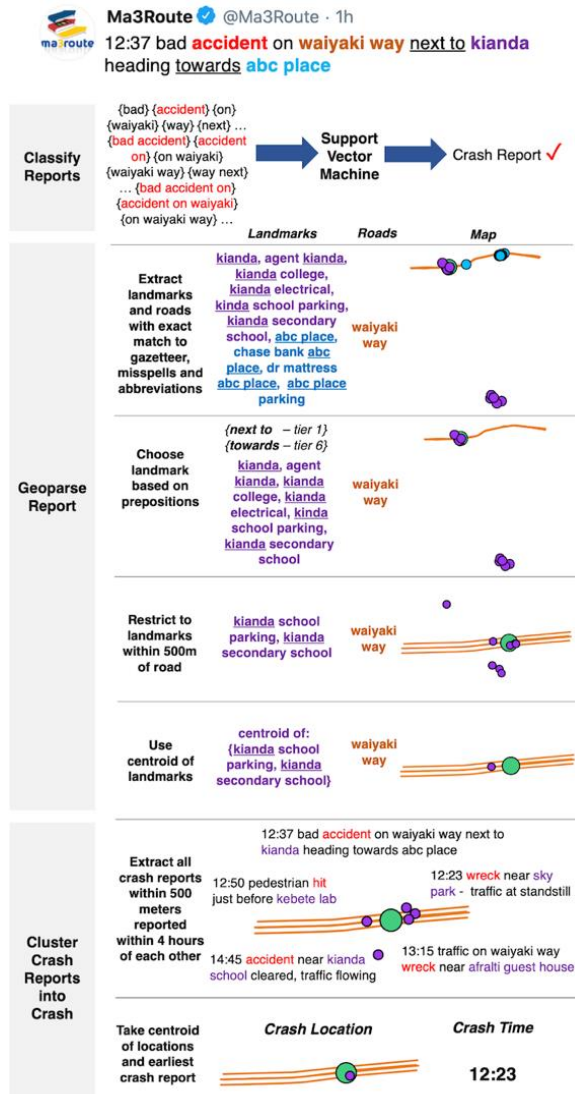
CENTRAL BUSINESS DISTRICT



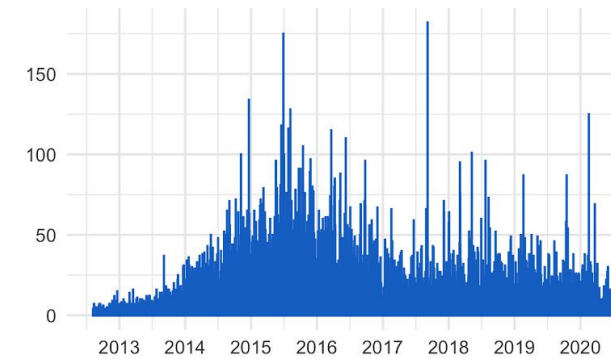
200 locations (blackspots) represent **52%** of crashes and **55%** of deaths

Blackspots are locations where a high number of crashes, deaths or injuries have occurred in a delimited space and time.

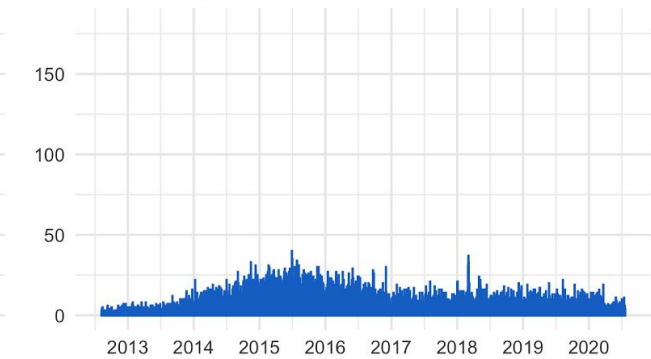
AI INNOVATIONS



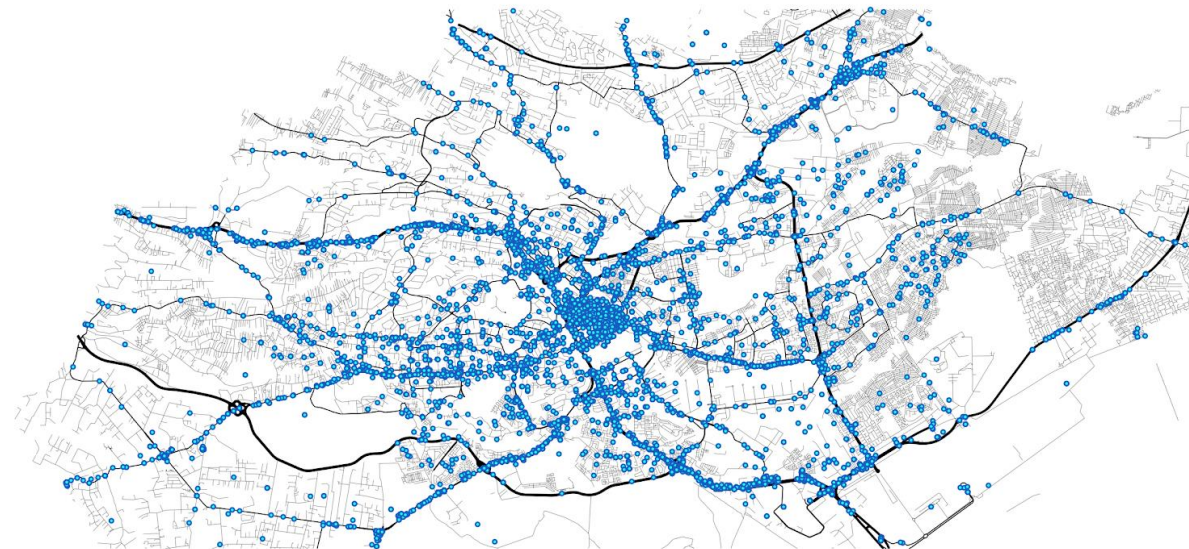
A Daily Number of Tweets that Report a Crash



B Daily Number of Geolocated Crashes



C Crashes, August 2012 - July 2020





Case 3. Leveraging Country Investments in Administrative Data: Rwanda Program

Florence Kondylis et al. (World Bank)

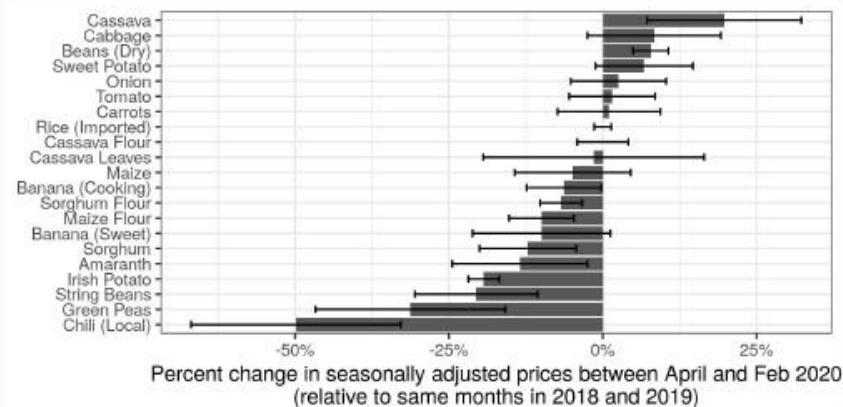
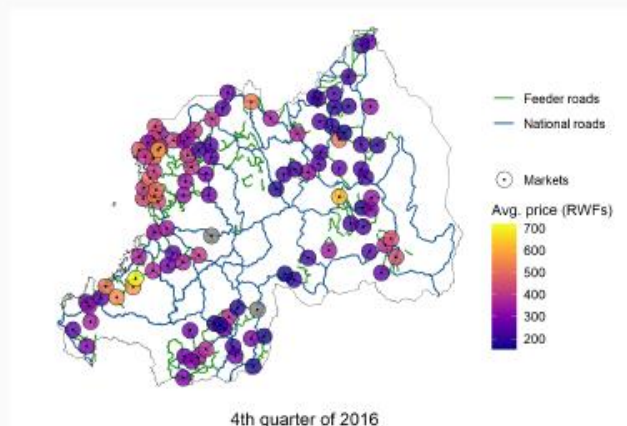
An aerial photograph of a rural landscape in Rwanda, showing terraced hillsides with green crops and several small, simple houses with brown roofs. A large blue circle is overlaid on the left side of the image, containing white text. A small white circle with a blue and yellow checkmark icon is positioned between the blue circle and a grey text box on the right.

In Rwanda we use a
country-based
approach to evaluate
large rural road
upgrading program on
market functioning
and household
welfare

Using existing administrative data
combined with high frequency
market price data in an event design

Data integration increases scope of analysis

Household Markets	Biennial Monthly	3600 households, 360 villages 68 goods, 130 markets	MD → WB funded, DIME → GoR
Migration Jobs	Triennial	Census of villages Firm (informal, formal) census	Administrative data
Roads	Quarterly	Construction MIS	
Traffic	Real-time	Commercial vehicle tracking	Private partnership
Nighttime lights	Monthly	Electricity use	Satellite imagery

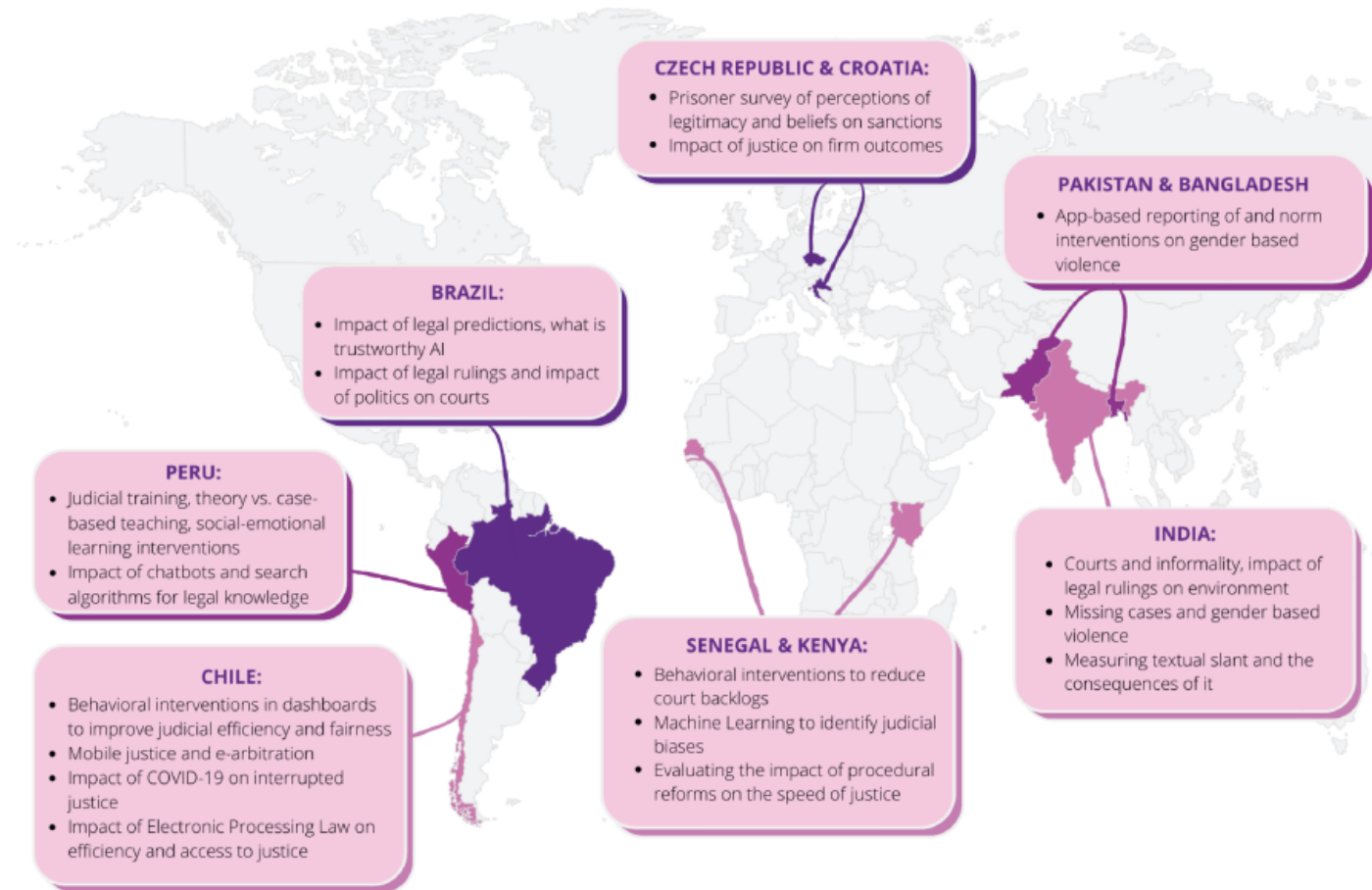




Case 4. Leveraging Investments in Administrative Data Systems: DE JURE

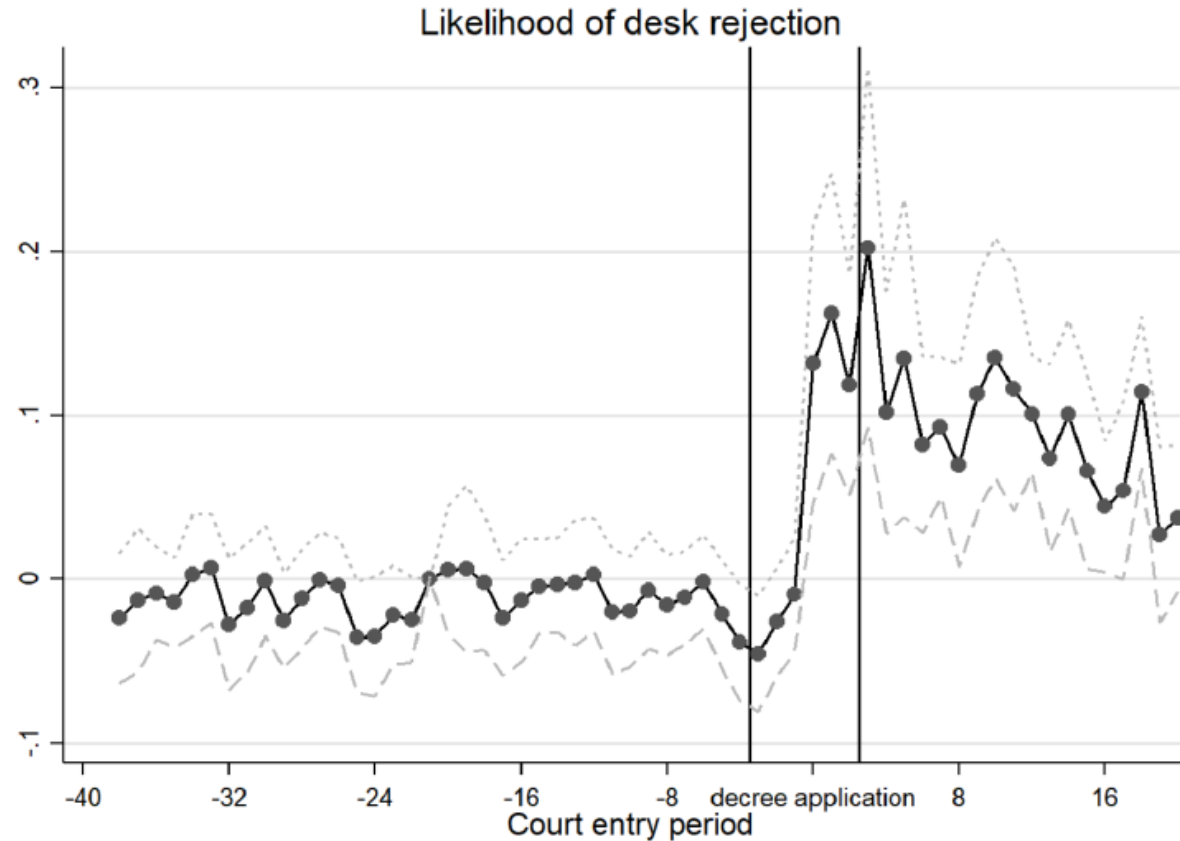
Daniel Chen et al. (World Bank)

Country Specific Examples of Our Work



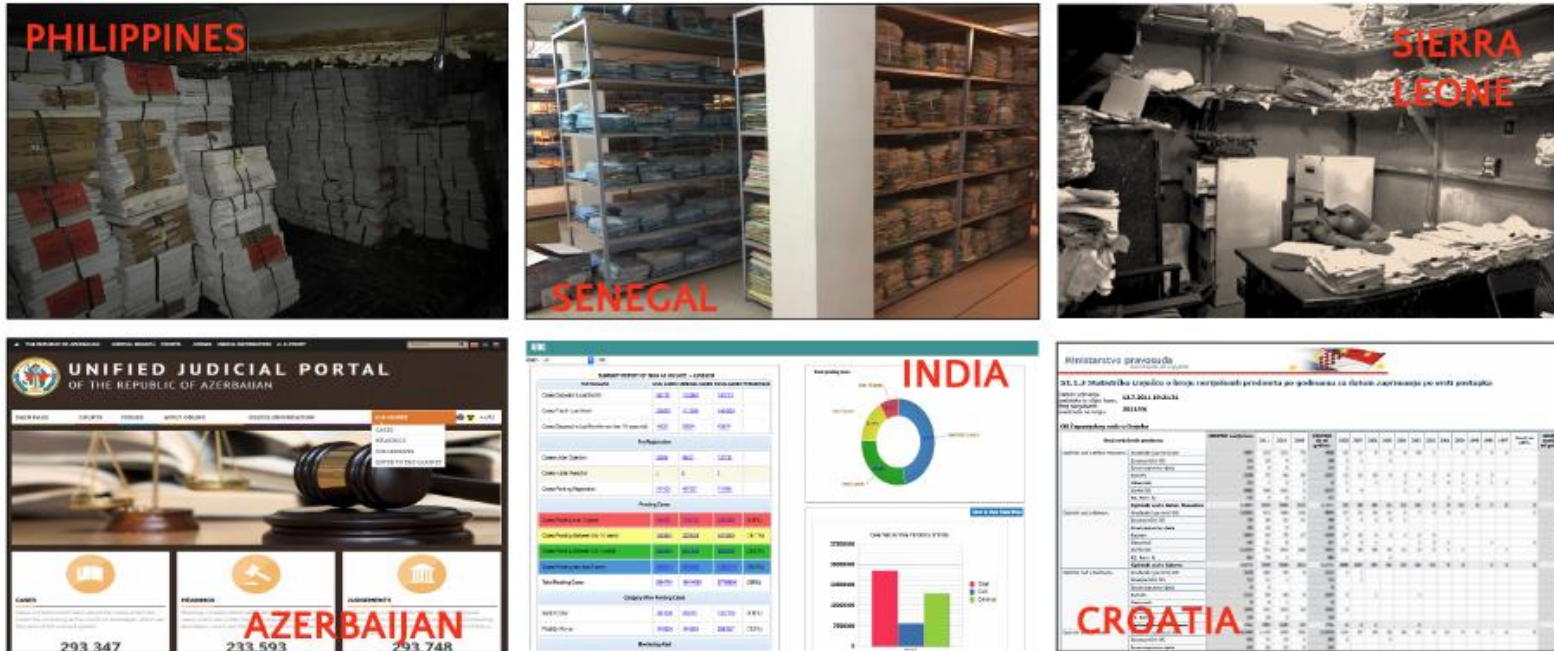
We run law and development RCTs through relationships with government partners who link legal cases to downstream effects for individuals and firms.

DE JURE: Senegal



=> Staggered roll-out of judicial reform giving judges the duty and powers to conclude pre-trial proceedings in 4 months

DE JURE



- Recent innovations have opened up new opportunities for delivery of justice
 - ▶ Increasingly digitized large-scale datasets
 - ▶ ML applications to produce interpretable data from unstructured text
 - ▶ Predictive models of decision-making to better understand biases and address them with digital interfaces

DE JURE: Actionable Analytics (Kenya)

Efficiency in Kenya:
Can low cost, 'actionable'
information improve performance?

TOP THREE REASONS FOR ADJOURNMENT			
Reason	Number	Percent	
Prosecutor not present	44	30%	
Typed proceedings not ready	34	20%	
Both parties not present	17	13%	

RECOMMENDED ACTION			
Addressing	<u>Prosecutor not present</u>	increases CCR by	30%
Addressing	<u>Typed proceedings not ready</u>	increases CCR by	20%
Addressing	<u>Both parties not present</u>	increases CCR by	13%

COURT MONTHLY FEEDBACK REPORT

Baricho Magistrate Court
NOVEMBER 2018

"By the end of my tenure in December 2020, we shall have no cases in court older than 2 years"

Honorable Justice David Maraga, Chief Justice

CRIMINAL CASES		CIVIL CASES	
SUMMARY OF KEY COURT EVENTS FOR OCTOBER 2018		SUMMARY OF KEY COURT EVENTS FOR OCTOBER 2018	
Cases filed	456	Cases filed	422
Cases resolved	234	Cases resolved	203
Rulings and judgments	130	Rulings and judgments	80
Adjournments	104	Adjournments	123

CASE CLEARANCE RATE (CCR) PREVIOUS THREE MONTHS	
September	53%
October	46%
November	56%

CASE CLEARANCE RATE (CCR) PREVIOUS THREE MONTHS	
September	35%
October	38%
November	51%

TOP THREE REASONS FOR ADJOURNMENT			
Reason	Number	Percent	
Prosecutor not present	44	30%	
Typed proceedings not ready	34	20%	
Both parties not present	17	13%	

TOP THREE REASONS FOR ADJOURNMENT			
Reason	Number	Percent	
Court not sitting	57	21%	
Both parties not present	44	12%	
Ruling not ready	12	9%	

RECOMMENDED ACTION			
Addressing	<u>Prosecutor not present</u>	increases CCR by	30%
Addressing	<u>Typed proceedings not ready</u>	increases CCR by	20%
Addressing	<u>Both parties not present</u>	increases CCR by	13%

RECOMMENDED ACTION			
Addressing	<u>Court not sitting</u>	increases CCR by	8%
Addressing	<u>Both parties not present</u>	increases CCR by	7%
Addressing	<u>Ruling not ready</u>	increases CCR by	4%

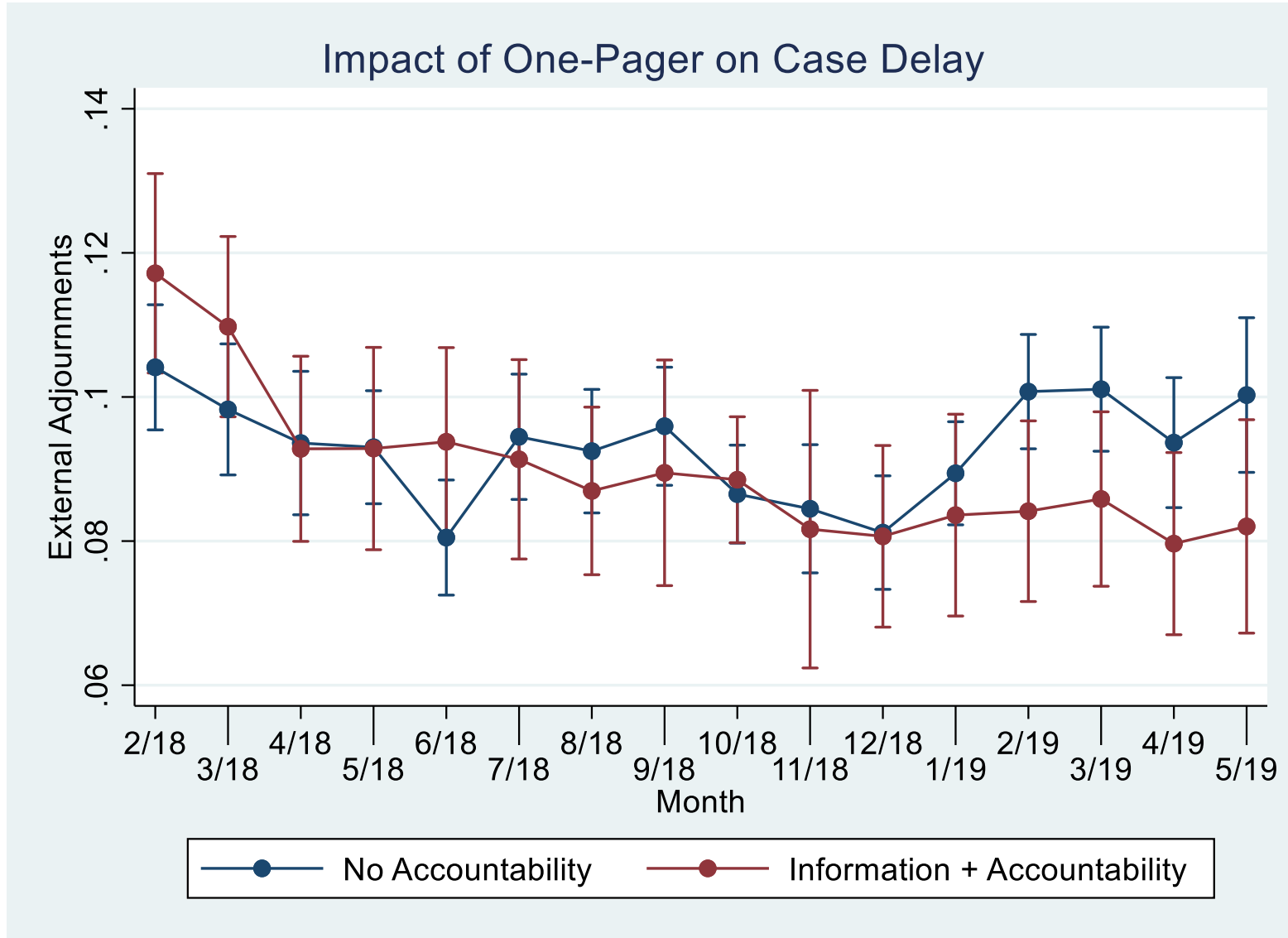
Case Clearance Rate (CCR) - Case Clearance Rate (Resolved + Filed) ÷ 100 measures the extent to which the court system is able to dispose of cases relative to the cases filed within a specified time period. A clearance rate of 100% implies that the court is coping with its workload. More than 100% clearance rate indicates that the court is reducing its case backlog while less than 100% means that the court is accumulating more cases.

Resolved Case (RC) - Any case where a judgment or a final ruling during the case has been made at the end of period under reference. It also means a finalized case.

Filed Cases (FC) - Any case that is registered in court of law for arbitration in a given period.

Analyze and present correlates of delay

DE JURE: Actionable Analytics (Kenya)



TAKEAWAY

Providing actionable information improves efficiency

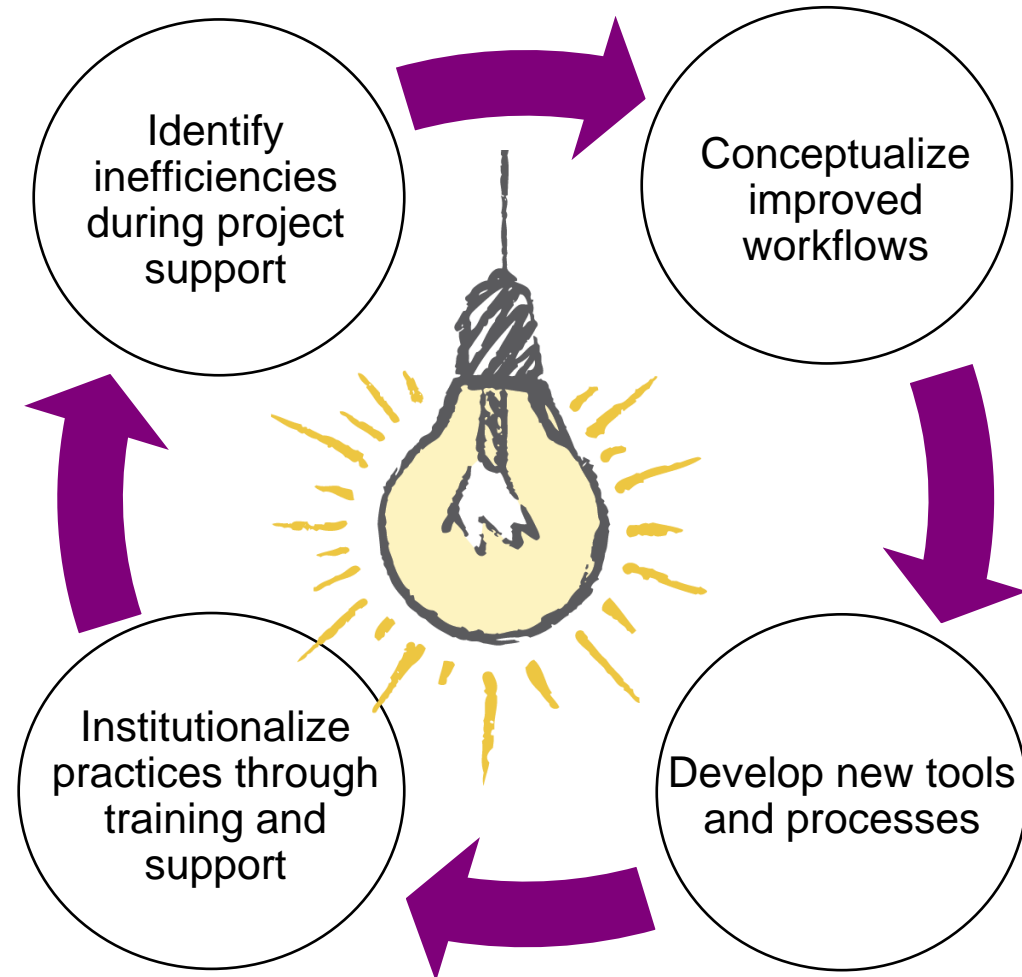
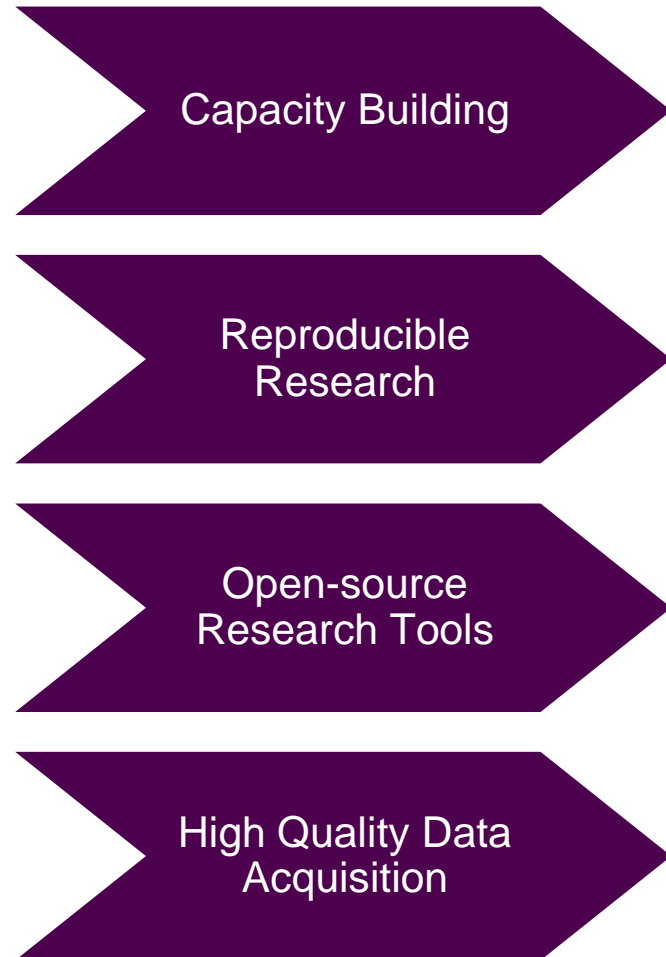


DIME Analytics: institutional
solution for high-quality
data and research



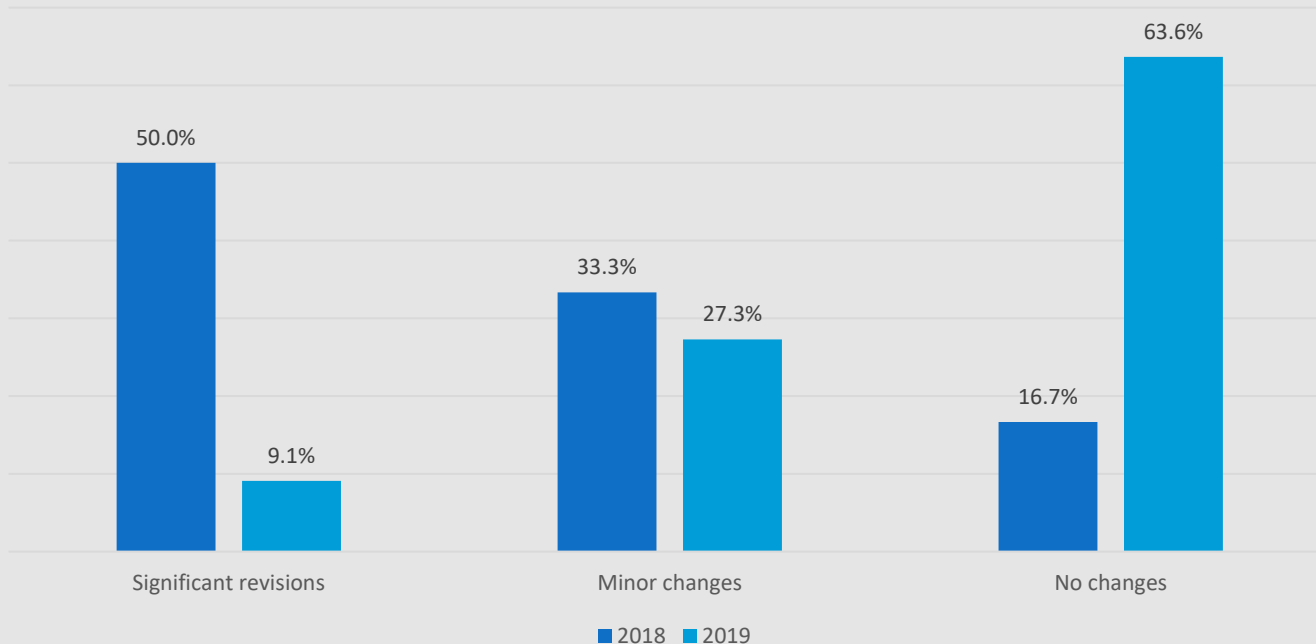
DIME
analytics

A systematic, iterative process to expand technical capacity across the research cycle



Computational Reproducibility

DIME Computational Reproducibility Checks



- DIME Analytics tests computational reproducibility for all DIME publications
- Check that all outputs replicate exactly from the code provided, before publication
- Provide detailed feedback on code organization, and technical support with data and code publication

Public goods for high-quality research



Development Research in Practice

The DIME Analytics Data Handbook



DIME Wiki

One-stop shop for impact evaluation resources



Stata visual library

Reproducible Stata code for graphs and maps



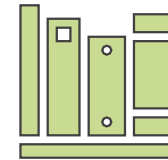
iefieldkit

Tools for primary data collection and processing



ietoolkit

Tools for data management and analysis

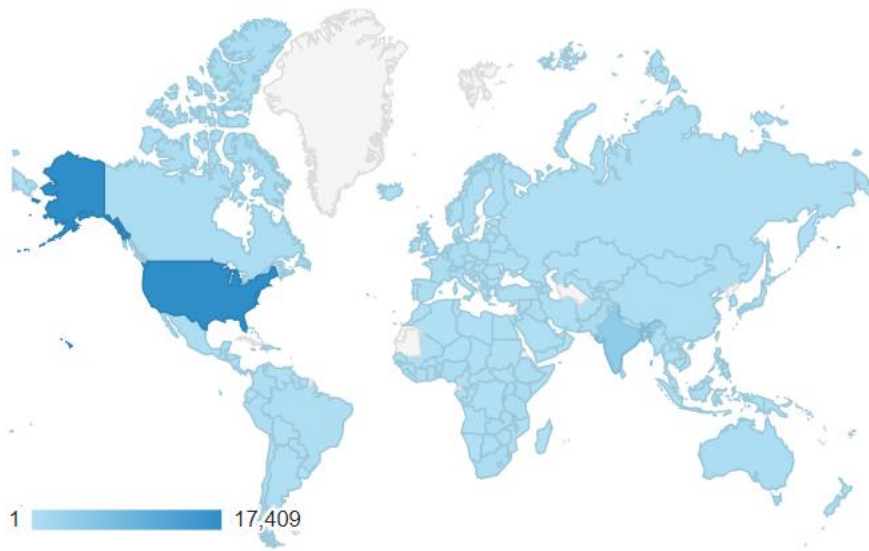


R econ visual library

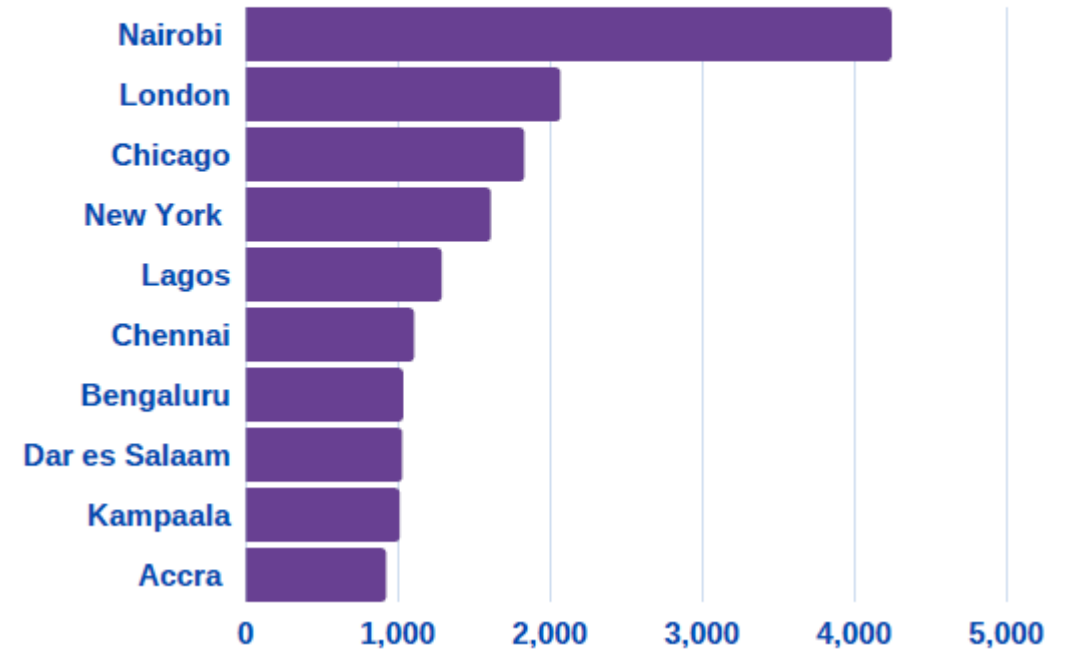
Reproducible R code for impact evaluation data visualization

DIME Wiki: global usership, growing rapidly

Global Userbase



Most Active Cities (outside D.C.)



Learn more (links)

- [DIME brochure](#)
- [DIME Annual Report](#)
- [DIME Website](#)
- [Development Impact Blog |](#)
- [DIME Wiki](#)



SCIENCE FOR IMPACT
 BETTER EVIDENCE FOR BETTER DECISIONS
 THE DIME EXPERIENCE

Impact Evaluation Helps Deliver Development Projects

*Arianna Legovini
 Vincenzo Di Maro
 Caio Piza*

Development Impact
 Laws, views, methods, and insights from the world of evaluation

Tags | Contact

How to Implicit Association Test?

SUBMITTED BY FLORENCE KONDYLIS ON WED, 04/10/2019
 CO-AUTHORS: LUIZA ANDRADE, ARIANNA LEGOVINI, KATE VYBORNIK, ASTRID ZWAGER

How to do Implicit Association Test?
 Implicit Association Tests (IATs) are being increasingly used in applied papers. While IATs can be found *off-the-shelf*, designing your own IAT is not so easy. We added a custom IAT to a survey of commuters in Rio de Janeiro, and go over the practical steps involved. For our project, we wanted to quantify the stigma women may face for not using gender-segregated public transport. We added a custom IAT to a survey of commuters in Rio de Janeiro, and go over the practical steps involved. For our project, we wanted to quantify the stigma women may face for not using gender-segregated public transport.

Read more »

discrimination | Field Survey | IAT | Transportation

Evaluation (DIME)

THE PROGRAM YOUR FUTURE

Bridging the gap
 April 11, 2019 — DIME is testing the impact of a program in Brazil's most vulnerable youth, blockchain programming academies. [Read More »](#)

OUR WORK

- Agriculture**
 Transforming rural space through technology, measurement and supply chains to secure brighter and more commercial futures.
- Energy and Environment**
 Are we doing enough on climate? No. From satellite data to farmer incentives, speeding up learning on what's possible.
- Entertainment Education**
 What public campaigns can professional entertainers can do. The amazing power of the narrative is changing both norms and behaviors.

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