Prosperity through Justice:

Reducing Market-Level Constraints to Economic Development

through Rule of Law

Daniel L. Chen, DE JURE (Data and Evidence for Justice Reform),

Institute for Advanced Study in Toulouse

Country Specific Examples of Our Work CZECH REPUBLIC & CROATIA: · Prisoner survey of perceptions of legitimacy and beliefs on sanctions · Impact of justice on firm outcomes PAKISTAN & BANGLADESH · App-based reporting of and norm interventions on gender based violence BRAZIL: · Impact of legal predictions, what is trustworthy Al Impact of legal rulings and impact of politics on courts · Iudicial training, theory vs. casebased teaching, social-emotional INDIA: · Courts and informality, impact of · Impact of chatbots and search legal rulings on environment algorithms for legal knowledge · Missing cases and gender based violence SENEGAL & KENYA: · Measuring textual slant and the · Behavioral interventions to reduce consequences of it court backlogs · Behavioral interventions in dashboards

· Machine Learning to identify judicial

· Evaluating the impact of procedural

reforms on the speed of justice

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

PERU:

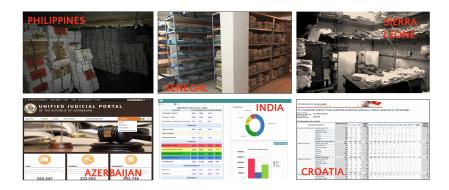
CHILE:

· Mobile justice and e-arbitration

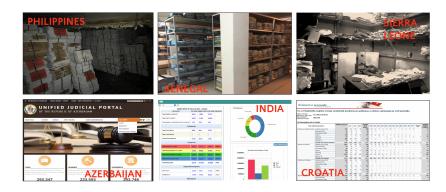
· Impact of COVID-19 on interrupted

· Impact of Electronic Processing Law on efficiency and access to justice

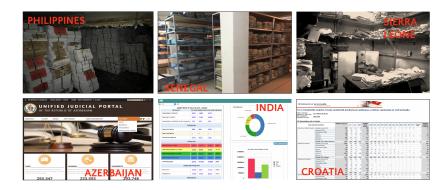
learning interventions



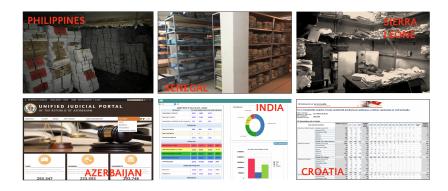
- Recent innovations have opened up new opportunities for delivery of justice
 - Increasingly digitized large-scale datasets
 - ▶ ML applications to produce interpretable data from unstructured text
 - Predictive models of decision-making to better understand biases and address them with digital interfaces



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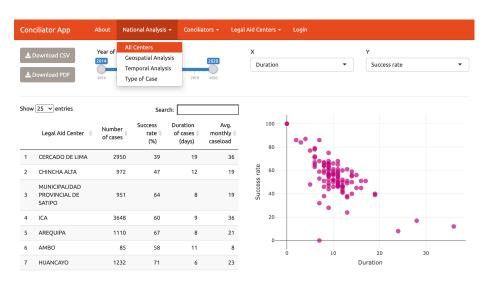


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Recommending Actions to Each Other



E-Justice Innovations

WhatsApp access to virtual courts



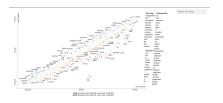
Apps for missing cases



Uber-ization of case backlog

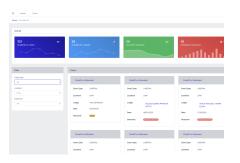


Open access legal search engines



Human-Centric

Personalized case-based teaching



Predicted self

Asylum Case Predictor



Building Capacity

Open source no-code tools for

Data entry and decision-support

						Q, Secret		9 8
NEW	MAC No. +	Name	Active	Apr	Professional Memb	Professional Qualiti	Esperance	n
	File:	Mar.	Yes	w No.	No.	Piles.	Piles.	
DELETE	MAC/0801-000	Allow Flore	(Na)		MTI, CIAG	BA Commerce	2 Years	SA.
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Understanding justice needs



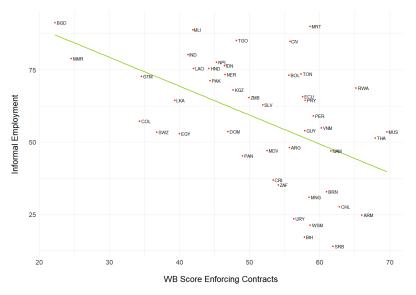
Learning best practices





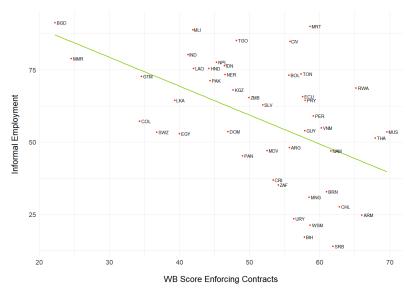
Increasing recognition-respect

Economic development & legal institutions are associated



A 20% increase in case duration is associated with a 10% decrease in GDP per capita (Penn World tables)

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- Nation-wide experiment using the first digitized daily court records
 - Developed an algorithm to identify the greatest source of court delays
 - ► T1: provide actionable information
 - ► T2: + accountability
 - ► Control: status quo (no information), RCT across all 124 court stations

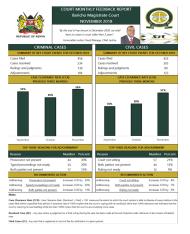
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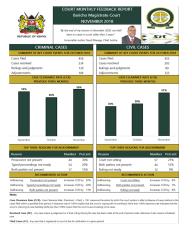
Reducing Information Frictions



Can AI provide actionable recommendations Improve the functioning of courts

Unlock the positive effects of justice on economic development?

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 - court efficiency and industry-level relationship-specificity => future growth in manufacturing (Amirapu 2017)
- Personnel economics of the state (Finan, Olken, and Pande 2017)
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Principal-agent model

- ► The principal (Chief Justice, CJ) wishes the agents (the judges) to exert effort and resolve cases fast.
- ▶ Absent the one-pagers, the agents' effort is unobservable, and thus can be provided at suboptimal low levels.
- ▶ Increasing the **monitoring** of agents through the one-pagers (which measure and reveal judges' effort) thus increases judges' effort.
- Civil society accountability introduces a new principal
- ► The general population wants faster justice
- ▶ Forums help monitor all groups that can contribute to delays
- If courts are slow
 - citizens will not use them, resulting in inefficient ways to do business
 - informal networks to prevent any expropriation
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Contract enforcement and economic development

- Suppose a firm contracts with a supplier to produce a customized good
 - Once the supplier has sunk the investment costs to produce the customized good, the buyer can renegotiate prices down
 - The supplier can sue in court, but typically recovers only a fraction
 NPV of recovery decreases with court delay
 - ▶ Slow courts depress reliance, investments, and productivity

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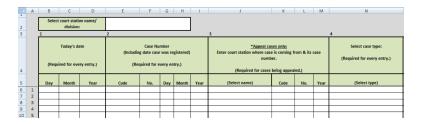
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Intervention

- Experimental design (N = 124 court stations):
 - Control group
 - Treatment 1: Feedback report
 - ▶ Treatment 2: Feedback report + Court User Committee
- Outcomes:
 - Adjournment, Case delay
 - Quality (citizen satisfaction, opinion quality)
 - ► Economic development

DCRT

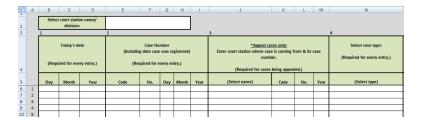


9 million observations on daily case activities, 2015-

Delays (Adjournments): Lawyer not ready (9%), Parties not ready (13%), Parties not present (13%), Witness not present (17%)

Clear remedies in Kenyan Law that address these delays e.g., active case management (pre-trial conference)

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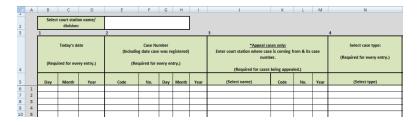


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Treatment

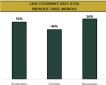


COURT MONTHLY FEEDBACK REPORT Baricho Magistrate Court NOVEMBER 2018

"By the end of my tenure in December 2020, we shall have no cases in court older than 3 years"



THE OBEING OF THE THE	Honorable Justice David N	Maraga, Chief Justice
CRIMINA	L CASES	
SUMMARY OF KEY COURT	EVENTS FOR OCTOBER 2018	SUMMARY
Cases filed	456	Cases filed
Cases resolved	234	Cases resolved
Rulings and judgments	130	Rulings and juc
Adjournments	104	Adjournments
CASE CLEARAN PREVIOUS TH		•



1	OP THREE REASONS FOR AD	JOURNMEN	T	
Reason		Number		
Prosecuto	r not present	44	30%	
Typed proceedings not ready		34	20%	
Both parties not present		17	13%	
	RECOMMENDED ACT	ION		
Addressing	Prosecutor not present	increases Cl	R by 30%	
Addressing	Typed proceedings not ready	increases Co	R by 20%	
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CIVIL CASES						
SUMMARY OF KEY COURT EVENTS FOR OCTOBER 2018						
Cases filed	422					
Cases resolved	203					
Rulings and judgments	80					
Adjournments	123					
CASE CLEARANCE RATE (CCR)						
PREVIOUS THREE MON	THS					

ajournments		123
	E CLEARANCE RATE EVIOUS THREE MON	
		51%
35%	38%	
September	October	November

TOP THREE REASONS FOR ADJOURNMENT						
eason		Number				
ourt not	sitting	57	21%			
oth partic	es not present	44	12%			
uling not	ready	12	9%			
	RECOMMENDED AC	TION				
dressing	Court not sitting	increases O	R by 8%			
dressing	Both parties not present	increases O	R by 7%			
dressing	Ruling not ready	increases O	R by 4%			

Case Clearance Rate (CCR) - Case Clearance Rate (Resolved + Filed) x 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 coping with a case backing while its set han 100% means that the court is communified more cases.

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

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

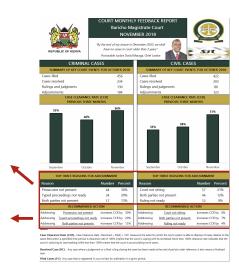
Data-Driven Recommendations

Efficiency in Kenya:

Can low cost, 'actionable' information improve performance?

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RECOMMENDED ACTION							
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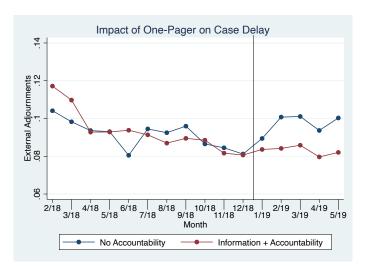


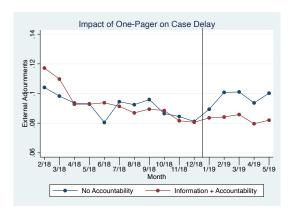
Analyze and present (localized) correlates of delay

Intervention

• First wave sent in February 2019

Results



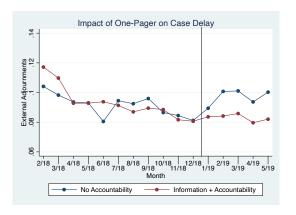


- Effect size suggests 20 percent impacts
- Compound effects: adjournments for another hearing
 - ► The mean number of hearings per case is 4.63
- Translates into a reduction of 107 days in trial length, or 22%

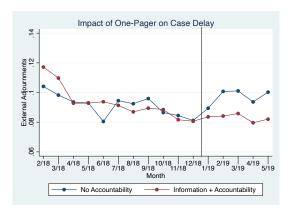


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• controlling for representation, charge, witness, judge identity, parties...

	Adjournment	External	Internal
	11ajouriment	Adjournment	Adjournment
OnePager * February 2019	-0.014	-0.017	0.000065
•	(0.012)	(0.011)	(0.0043)
OnePager CUC * February 2019	-0.031**	-0.030**	-0.0042
•	(0.015)	(0.013)	(0.0043)
OnePager * March 2019	0.0016	0.0028	-0.00028
Ü	(0.013)	(0.011)	(0.0041)
OnePager CUC * March 2019	-0.017	-0.022*	0.0014
Ü	(0.015)	(0.011)	(0.0040)
OnePager * April 2019	-0.012	-0.0044	-0.0076
	(0.014)	(0.012)	(0.0063)
OnePager CUC * April 2019	-0.025	-0.023*	-0.0070
	(0.016)	(0.012)	(0.0063)
OnePager * May 2019	0.012	0.018	-0.0020
	(0.017)	(0.015)	(0.0053)
OnePager CUC * May 2019	-0.013	-0.012	-0.0026
	(0.017)	(0.015)	(0.0049)
OnePager * After June 2019	0.0058	0.0064	0.00013
	(0.014)	(0.012)	(0.0038)
OnePager CUC * After June 2019	-0.0070	-0.015	-0.00027
	(0.016)	(0.013)	(0.0043)
OnePager * Month Before	-0.0089	-0.0030	-0.0069
	(0.013)	(0.0091)	(0.0053)
OnePager CUC * Month Before	-0.0074	-0.010	-0.0084
	(0.013)	(0.011)	(0.0053)
Observations	6162668	6399868	6399868

This intervention reduced the probability of adjournment by 3% (as in raw data)

Effect sizes are large relative to baseline of 18%

• controlling for representation, charge, witness, judge identity, parties...

	Adjournment	External Adjournment	Internal Adjournment
OnePager * February 2019	-0.014	-0.017	0.000065
	(0.012)	(0.011)	(0.0043)
OnePager CUC * February 2019	-0.031**	-0.030**	-0.0042
	(0.015)	(0.013)	(0.0043)
OnePager * March 2019	0.0016	0.0028	-0.00028
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OnePager CUC * March 2019	-0.017	-0.022*	0.0014
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Adjournments

- "External" adjournments (74%): caused by other actors:
 - ▶ Top adjournment reasons (52%): Lawyer not ready (9%), Parties not ready (13%), Parties not present (13%), Witness not present (17%)
 - advocate not present, prosecutor not ready, prosecutor not present, witness not ready, death of a party, expert report not ready, file missing, judge on transfer, no exhibits, no proof of service, parties to negotiate, no interpreter, matters cannot be reached, expert witness absent, accused not ready, accused not present, faulty charge sheet, accused not supplied with witness statements/relevant documents, police file not availed, other
- "Internal" adjournments (26%): caused by the court itself:
 - court not sitting, court on its own motion, judgment not ready, ruling not ready, matters not cause listed, no reason recorded, typed proceedings not ready, submission not ready, recusal, court on leave, court on official duty, court indisposed

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Accountability mechanism

					Same as on One-Pager	Different as One-Pager
OnePager * February 2019	-0.013	-0.012	-0.012	-0.0040	-0.015*	0,0026
	(0.012)	(0.012)	(0.012)	(0.012)	(0.0085)	(0.0092)
OnePager CUC * February 2019	-0.028**	-0.028**	-0.028**	-0.023	-0.018**	-0.0066
	(0.014)	(0.014)	(0.014)	(0.014)	(0.0091)	(0.010)
OnePager * March 2019	0.0012	0.0016	0.0016	0.013	-0.0046	0.0091
	(0.013)	(0.013)	(0.013)	(0.014)	(0.0081)	(0.0098)
OnePager CUC * March 2019	-0.015	-0.017	-0.017	-0.016	-0.014*	-0.0018
	(0.014)	(0.015)	(0.015)	(0.014)	(0.0078)	(0.010)
OnePager * April 2019	-0.012	-0.011	-0.011	-0.0030	-0.010	0.00078
	(0.014)	(0.014)	(0.014)	(0.013)	(0.010)	(0.011)
OnePager CUC * April 2019	-0.024	-0.024	-0.024	-0.032**	-0.019*	-0.0058
	(0.015)	(0.016)	(0.016)	(0.014)	(0.010)	(0.011)
OnePager * May 2019	0.0099	0.010	0.010	0.0023	-0.0030	0.027**
	(0.017)	(0.017)	(0.017)	(0.015)	(0.014)	(0.014)
OnePager CUC * May 2019	-0.014	-0.018	-0.018	-0.021	-0.013	0.0041
	(0.017)	(0.017)	(0.017)	(0.015)	(0.014)	(0.012)
OnePager * After June 2019	0.0028	0.0035	0.0035	-0.0015	0.0012	0.0044
	(0.017)	(0.016)	(0.016)	(0.011)	(0.0066)	(0.013)
OnePager CUC * After June 2019	-0.00027	-0.0030	-0.0030	-0.020	-0.0050	0.00035
	(0.019)	(0.019)	(0.019)	(0.015)	(0.0077)	(0.014)
OnePager * Month Before	-0.0090	-0.0082	-0.0082	-0.0018	-0.0031	-0.0027
	(0.013)	(0.013)	(0.013)	(0.013)	(0.0083)	(0.0099)
OnePager CUC * Month Before	-0.0063	-0.0065	-0.0065	-0.0050	-0.0100	0.0046
	(0.013)	(0.013)	(0.013)	(0.014)	(0.0094)	(0.011)
Case Code Fixed Effects		Yes	Yes	Yes		
Controls			Yes	Yes		
Judge Fixed Effects				Yes		
Observations	8641819	8464456	8464456	7074897	9047041	9047041

Evidence of judicial learning (judge fixed effects)

^{..} from the One-Pager (compare last two columns)

Accountability mechanism

					Same as on One-Pager	Different as One-Pager
OnePager * February 2019	-0.013	-0.012	-0.012	-0.0040	-0.015*	0,0026
	(0.012)	(0.012)	(0.012)	(0.012)	(0.0085)	(0.0092)
OnePager CUC * February 2019	-0.028**	-0.028**	-0.028**	-0.023	-0.018**	-0.0066
	(0.014)	(0.014)	(0.014)	(0.014)	(0.0091)	(0.010)
OnePager * March 2019	0.0012	0.0016	0.0016	0.013	-0.0046	0.0091
	(0.013)	(0.013)	(0.013)	(0.014)	(0.0081)	(0.0098)
OnePager CUC * March 2019	-0.015	-0.017	-0.017	-0.016	-0.014*	-0.0018
	(0.014)	(0.015)	(0.015)	(0.014)	(0.0078)	(0.010)
OnePager * April 2019	-0.012	-0.011	-0.011	-0.0030	-0.010	0.00078
	(0.014)	(0.014)	(0.014)	(0.013)	(0.010)	(0.011)
OnePager CUC * April 2019	-0.024	-0.024	-0.024	-0.032**	-0.019*	-0.0058
	(0.015)	(0.016)	(0.016)	(0.014)	(0.010)	(0.011)
OnePager * May 2019	0.0099	0.010	0.010	0.0023	-0.0030	0.027**
	(0.017)	(0.017)	(0.017)	(0.015)	(0.014)	(0.014)
OnePager CUC * May 2019	-0.014	-0.018	-0.018	-0.021	-0.013	0.0041
	(0.017)	(0.017)	(0.017)	(0.015)	(0.014)	(0.012)
OnePager * After June 2019	0.0028	0.0035	0.0035	-0.0015	0.0012	0.0044
	(0.017)	(0.016)	(0.016)	(0.011)	(0.0066)	(0.013)
OnePager CUC * After June 2019	-0.00027	-0.0030	-0.0030	-0.020	-0.0050	0.00035
	(0.019)	(0.019)	(0.019)	(0.015)	(0.0077)	(0.014)
OnePager * Month Before	-0.0090	-0.0082	-0.0082	-0.0018	-0.0031	-0.0027
	(0.013)	(0.013)	(0.013)	(0.013)	(0.0083)	(0.0099)
OnePager CUC * Month Before	-0.0063	-0.0065	-0.0065	-0.0050	-0.0100	0.0046
	(0.013)	(0.013)	(0.013)	(0.014)	(0.0094)	(0.011)
Case Code Fixed Effects		Yes	Yes	Yes		
Controls			Yes	Yes		
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.. from the One-Pager (compare last two columns)

Accountability mechanism

					Same as on	Different as
					One-Pager	One-Pager
OnePager * February 2019	-0.013	-0.012	-0.012	-0.0040	-0.015*	0,0026
	(0.012)	(0.012)	(0.012)	(0.012)	(0.0085)	(0.0092)
OnePager CUC * February 2019	-0.028**	-0.028**	-0.028**	-0.023	-0.018**	-0.0066
	(0.014)	(0.014)	(0.014)	(0.014)	(0.0091)	(0.010)
OnePager * March 2019	0.0012	0.0016	0.0016	0.013	-0.0046	0.0091
	(0.013)	(0.013)	(0.013)	(0.014)	(0.0081)	(0.0098)
OnePager CUC * March 2019	-0.015	-0.017	-0.017	-0.016	-0.014*	-0.0018
	(0.014)	(0.015)	(0.015)	(0.014)	(0.0078)	(0.010)
OnePager * April 2019	-0.012	-0.011	-0.011	-0.0030	-0.010	0.00078
	(0.014)	(0.014)	(0.014)	(0.013)	(0.010)	(0.011)
OnePager CUC * April 2019	-0.024	-0.024	-0.024	-0.032**	-0.019*	-0.0058
	(0.015)	(0.016)	(0.016)	(0.014)	(0.010)	(0.011)
OnePager * May 2019	0.0099	0.010	0.010	0.0023	-0.0030	0.027**
	(0.017)	(0.017)	(0.017)	(0.015)	(0.014)	(0.014)
OnePager CUC * May 2019	-0.014	-0.018	-0.018	-0.021	-0.013	0.0041
	(0.017)	(0.017)	(0.017)	(0.015)	(0.014)	(0.012)
OnePager * After June 2019	0.0028	0.0035	0.0035	-0.0015	0.0012	0.0044
	(0.017)	(0.016)	(0.016)	(0.011)	(0.0066)	(0.013)
OnePager CUC * After June 2019	-0.00027	-0.0030	-0.0030	-0.020	-0.0050	0.00035
	(0.019)	(0.019)	(0.019)	(0.015)	(0.0077)	(0.014)
OnePager * Month Before	-0.0090	-0.0082	-0.0082	-0.0018	-0.0031	-0.0027
	(0.013)	(0.013)	(0.013)	(0.013)	(0.0083)	(0.0099)
OnePager CUC * Month Before	-0.0063	-0.0065	-0.0065	-0.0050	-0.0100	0.0046
	(0.013)	(0.013)	(0.013)	(0.014)	(0.0094)	(0.011)
Case Code Fixed Effects	(010)	Yes	Yes	Yes	()	(51011)
Controls			Yes	Yes		
Judge Fixed Effects				Yes		
Observations	8641819	8464456	8464456	7074897	9047041	9047041

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 - .. from the One-Pager (compare last two columns)

Data:

- ► Daily courts records
- ► High court opinions
- Court satisfaction surveys
- ► Kenyan Continuous Household Survey
- Results: Information and accountability causes
 - reduction in adjournments
 - firms in contract intensive industries wrote more contracts
 - wage growth in contract intensive industries
 - increase in structural transformation

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- Compile database of all 159,645 written decisions in Kenya's publicly available search engine for higher courts (1976-2020)
- Extract proxies for quality
 - Length of the judgement
 - Number of laws or cases cited
 - Number of times a decision is cited
 - ▶ Whether a specific decision was appealed/reversed by higher courts
- We match these appeals with their original cases by using the case numbers and date of delivery extracted from the case history of appeals

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- Court User Satisfaction Surveys (CUSS, 2015-2019) collected by the Kenyan judiciary
 - Satisfaction with multiple aspects of court processes

Speed of Justice & Quality

No adverse impacts on usual proxies for quality

	Judgement	Cases	Laws	Number
	Length	in text	in text	citations
OnePager * February 2019	-2.75	-0.87	0.23	-0.01
	(160.75)	(0.66)	(0.55)	(0.09)
OnePager CUC * February 2019	-38.67	-0.07	0.06	-0.10
	(179.62)	(0.82)	(0.54)	(0.10)
OnePager * March 2019	194.00	0.09	0.32	0.05
	(142.12)	(0.38)	(0.50)	(0.05)
OnePager CUC * March 2019	107.30	0.54	0.67	0.22
	(179.59)	(0.52)	(0.60)	(0.25)
OnePager * April 2019	186.91	0.73	0.56	0.13*
	(193.18)	(0.68)	(0.73)	(0.07)
OnePager CUC * April 2019	-29.20	0.89	0.49	-0.07
	(229.49)	(0.60)	(0.82)	(0.09)
OnePager * May 2019	-4.81	-0.76	0.51	0.08
	(221.05)	(0.67)	(0.69)	(0.07)
OnePager CUC * May 2019	-92.43	0.17	0.86	-0.11
	(236.63)	(0.78)	(0.80)	(0.09)
OnePager * After June 2019	143.04	-0.04	0.36	0.08
	(151.46)	(0.75)	(0.69)	(0.07)
One Pager CUC * After June 2019	70.80	0.82	0.07	-0.05
	(194.39)	(0.87)	(0.66)	(0.09)
OnePager * Month Before	-4.36	0.24	-0.26	0.08
	(172.62)	(0.45)	(0.72)	(0.07)
OnePager CUC * Month Before	206.14	1.45**	0.35	0.14
	(194.22)	(0.61)	(0.68)	(0.14)
Observations	137,376	137,376	137,376	137,231
R-squared	0.111	0.141	0.126	0.034
Mean Dep Var	2023	3.273	5.128	1.350
(SD)	2643	6.558	13.51	12.82

Speed of Justice & Quality

No adverse impacts on usual proxies for quality

Appeal Convicted Evivoleus

	Appeal	Convicted	Frivolous
OnePager * February 2019	0.027	0.047	0.0026
	(0.024)	(0.031)	(0.0067)
OnePager CUC * February 2019	-0.011	0.011	-0.0019
	(0.024)	(0.0088)	(0.0057)
OnePager * March 2019	0.047	0.027**	0.0020
	(0.029)	(0.013)	(0.0034)
OnePager CUC * March 2019	-0.0095	0.017	-0.0015
	(0.037)	(0.012)	(0.0051)
OnePager * April 2019	0.066	0.0079	-0.0045
	(0.051)	(0.011)	(0.0040)
OnePager CUC * April 2019	-0.00031	0.020	-0.0036
	(0.031)	(0.014)	(0.0079)
OnePager * May 2019	0.011	0.015	-0.0023
	(0.037)	(0.013)	(0.0037)
OnePager CUC * May 2019	-0.021	0.016	0.0053
	(0.033)	(0.011)	(0.0073)
OnePager * After June 2019	0.016	0.015*	-0.0018
	(0.048)	(0.0076)	(0.0041)
OnePager CUC * After June 2019	0.042	0.0064	-0.0098
	(0.039)	(0.010)	(0.0061)
OnePager * Month Before	0.017	0.0037	-0.0022
	(0.036)	(0.012)	(0.0051)
OnePager CUC * Month Before	-0.00094	0.0061	-0.0087
	(0.037)	(0.011)	(0.0059)
Observations	1321777	9047041	9047041

Speed of Justice & Citizen Satisfaction

What suggestions do you have for improving court facilities and services?

	Judge neutral	Judge led proceedings well	Suggestion Speed	Suggestion Quality
OnePager * 2019	0.04	0.00	-0.06*	-0.06***
	(0.07)	(0.07)	(0.03)	(0.02)
OnePager_CUC * 2019	-0.09	-0.04	-0.04	-0.05***
	(0.07)	(0.06)	(0.04)	(0.02)
OnePager * 2015	0.29	0.33	-0.05	0.01
	(0.27)	(0.32)	(0.03)	(0.04)
OnePager_CUC * 2015	0.26	0.31	-0.00	0.02
	(0.26)	(0.30)	(0.03)	(0.04)
Observations	12,612	13,847	15,199	15,199
R-squared	0.875	0.903	0.227	0.176

We find a reduction in complaints about speed and quality.

No effects on complaints about court infrastructure, the court cells, the customer care desk, the court service delivery charter, or the court registry

One-Pagers did not change any of those factors

Speed of Justice & Citizen Satisfaction

What suggestions do you have for improving court facilities and services?

	Judge neutral	Judge led proceedings well	Suggestion Speed	Suggestion Quality
OnePager * 2019	0.04	0.00	-0.06*	-0.06***
	(0.07)	(0.07)	(0.03)	(0.02)
OnePager_CUC * 2019	-0.09	-0.04	-0.04	-0.05***
	(0.07)	(0.06)	(0.04)	(0.02)
OnePager * 2015	0.29	0.33	-0.05	0.01
	(0.27)	(0.32)	(0.03)	(0.04)
OnePager_CUC * 2015	0.26	0.31	-0.00	0.02
	(0.26)	(0.30)	(0.03)	(0.04)
Observations	12,612	13,847	15,199	15,199
R-squared	0.875	0.903	0.227	0.176

We find a reduction in complaints about speed and quality.

No effects on complaints about court infrastructure, the court cells, the customer care desk, the court service delivery charter, or the court registry

One-Pagers did not change any of those factors

Effects on Economic Outcomes

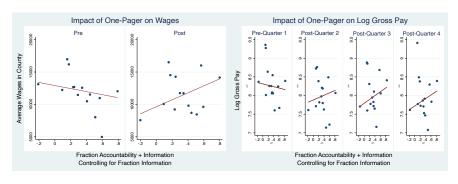
- Kenya Continuous Household Survey Programme (KCHSP)
 - ▶ implemented by the Kenyan National Bureau of Statistics (KNBS)
 - representative sample of Kenya
 - standard labor market outcomes (wages, labor contract, tenure)
- industry in which the individual is working (using the International Standard Industrial Classification)

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Speed of Justice & Economic Outcomes

Kenya Continuous Household Survey measures wages, industry, contracts



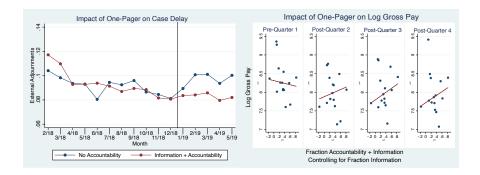
Wages of individuals in the county is associated with proportion of treated court stations in a county

Effects on Economic Outcomes

	Wage	Wage	Wage	Above Median CI	Below Median CI
Frac. OnePager * Post * CI			61.61		
			(46.95)		
Frac. One PagerCUC * Post * CI			76.18**		
			(34.96)		
Frac. OnePager * Post	58.50		52.40	93.36	39.02
	(36.98)		(36.93)	(67.34)	(40.60)
Frac. OnePagerCUC * Post	98.37**		106.88**	177.71**	66.28
	(41.77)		(44.29)	(81.57)	(48.04)
Frac. OnePager * Quarter 2		61.67			
		(45.16)			
Frac. One PagerCUC * Quarter 2		73.25			
		(48.16)			
Frac. OnePager * Quarter 3		71.74**			
		(34.70)			
Frac. One PagerCUC * Quarter 3		139.61***			
		(43.15)			
Frac. OnePager * Quarter 4		35.97			
		(46.34)			
Frac. OnePagerCUC * Quarter 4		82.97			
		(51.31)			
Observations	7,457	7,457	6,857	2,189	4,668
County fixed effects	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES
CI	NO	NO	YES	NO	NO
Mean control group	261	261	261	261	261
SD control group	319.3	319.3	319.3	319.3	319.3

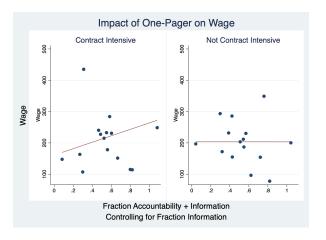
Average impact on wages to be 98.4 over a mean of 261. This translates to a 37% increase in wages (21% of the population report wages). The overall effect is 8% income per capita.

Speed of Justice & Economic Outcomes



Immediate wage effect is consistent with expectations mechanism.

Contract Intensity



The effects are larger in industries that are contract-intensive (i.e., complex input mix and reliance on contract enforcement)

Contract Intensity

Moving an individual from an industry at the average to the top 5 percent in terms of contract intensity is associated with a treatment effect of 23 percent increase in their wages

	Wage	Wage	Wage	Above Median CI	Below Median CI
Frac. OnePager * Post * CI			61.61		
			(46.95)		
Frac. OnePagerCUC * Post * CI			76.18**		
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Frac. OnePager * Post	58.50		52.40	93.36	39.02
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Quarter FE	YES	YES	YES	YES	YES
CI	NO	NO	YES	NO	NO
Mean control group	261	261	261	261	261
SD control group	319.3	319.3	319.3	319.3	319.3

Contract Intensity: Other Measures

			0 -	
Frac. OnePager * Post * CI	61.61			
Frac. One PagerCUC * Post * CI	(46.95) 76.18** (34.96)			
Frac. OnePager * Post	52.40 (36.93)	56.18 (63.25)	24.64 (41.85)	27.78 (46.97)
Frac. OnePagerCUC * Post	106.88** (44.29)	94.39 (60.38)	34.66 (47.52)	31.84 (46.14)
Frac. OnePager * Post * CI BEA	(44.23)	-2.95 (18.46)	(41.02)	(40.14)
Frac. One PagerCUC * Post * CI BEA		42.79* (21.42)		
Frac. OnePager * Post * CI WBES		(21.42)	-13.43 (23.41)	
Frac. One PagerCUC * Post * CI WBES			60.93** (28.42)	
Frac. One Pager * Post * CI I/O WBES			(20.42)	-14.52 (50.64)
Frac. One PagerCUC * Post * CI I/O WBES				73.08** (32.69)
Observations	6,857	3,513	2,582	2,582
County fixed effects	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES
Contract-Intensity	YES	YES	YES	YES
Mean control group	261	261	261	261
SD control group	319.3	319.3	319.3	319.3

Wage

Contract Intensity: Controls

Robust to tenure, gender, age, education, household size, etc.

Frac. OnePager * Post	52.40	55.68	51.48	49.15	44.28	53.21	40.49
	(36.93)	(37.08)	(36.48)	(36.92)	(34.72)	(36.86)	(33.94)
Frac. OnePagerCUC * Post	106.88**	116.87**	105.97**	103.53**	88.72**	105.30**	90.07*
	(44.29)	(46.98)	(43.91)	(44.18)	(43.25)	(44.76)	(45.20)
Frac. OnePager * Post * CI	61.61	42.00	61.40	59.61	51.83	61.82	34.73
	(46.95)	(38.05)	(47.29)	(46.62)	(38.37)	(46.31)	(31.30)
Frac. OnePagerCUC * Post * CI	76.18**	78.78**	76.35**	75.23**	68.35**	75.94**	69.54**
	(34.96)	(34.96)	(34.76)	(35.29)	(29.78)	(34.61)	(29.98)
Observations	6,857	6,651	6,857	6,857	6,857	6,857	6,651
County fixed effects	YES	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES	YES
CI	YES	YES	YES	YES	YES	YES	YES
Mean control group	261	261	261	261	261	261	261
SD control group	319.3	319.3	319.3	319.3	319.3	319.3	319.3
Tenure		YES					YES
Gender			YES				YES
Age				YES			YES
Education					YES		YES
HH size						YES	YES

Robust to different trimming of the wages, or using the log of wages, or using other measures of wage

	Wage	$\begin{array}{c} {\rm Wage} \\ {\rm Trim} \ 3 \ {\rm sd} \end{array}$	Log Wage	Total Gross Pay	Extensive Margin Wages	Written Contract
Frac. OnePager * Post * CI	61.61	63.25	0.37	59.99	0.022	0.06**
	(46.95)	(45.94)	(0.32)	(59.51)	(0.033)	(0.03)
Frac. OnePagerCUC * Post * CI	76.18**	74.91**	0.33*	110.21*	0.005	0.06**
0	(34.96)	(35.45)	(0.18)	(57.14)	(0.026)	(0.03)
Frac. OnePager * Post	52.40	45.80	0.26	69.39	0.016	0.02
Ü	(36.93)	(37.56)	(0.35)	(64.07)	(0.037)	(0.02)
Frac. OnePagerCUC * Post	106.88**	103.29**	0.55	173.95**	-0.008	0.04
	(44.29)	(44.23)	(0.35)	(67.44)	(0.029)	(0.02)
Observations	6.857	6.827	6.857	3.574	34.887	34.154
County fixed effects	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES
ČI	YES	YES	YES	YES	YES	YES
Mean control group	261	261	8.225	436.4	0.0921	0.143
SD control group	319.3	319.3	1.819	462.4	0.289	0.350

Individuals in the KCHSP are asked whether their labor contract is a written contract, a verbal agreement, an implied contract, or not a contract. We find **more written contracts** after the reform, which is indicative of citizens feeling more confident writing contracts.

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VARIABLES	Wage	Wage	Contract
Frac. OnePager * Post	58.50	39.47	0.03
11000 0 1101 0 001 1 000	(36.98)	(31.45)	(0.02)
Frac. OnePagerCUC * Post	98.37**	66.58**	0.04*
Contract	(41.77)	(31.99) 332.96***	(0.02)
		(12.48)	
Constant	357.06***	203.45***	0.36***
	(8.14)	(8.78)	(0.00)
Observations	7,457	7,283	35,078
R-squared	0.065	0.324	0.045
County fixed effects	YES	YES	YES
Quarter FE	YES	YES	YES

17% of the increase in wages may be attributeable to written contracts

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		00 1 -	0.00
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	(36.98)	(31.45)	(0.02)
Frac. OnePagerCUC * Post	98.37**	66.58**	0.04*
	(41.77)	(31.99)	(0.02)
Contract	, ,	332.96***	, ,
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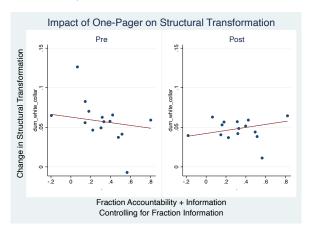
Occupation

A slight increase in non-farm activities, in "white collar" occupations compared to "blue collar" occupations, a slight increase in months worked.

	Non-farm	White Col.	White vs Blue	Months worked
0 P *0 + 0	0.05	0.01	0.05	0.00
OnePager * Quarter 2	0.05	0.01	0.05	-0.06
	(0.06)	(0.01)	(0.04)	(0.25)
OnePager_CUC * Quarter 2	0.10*	0.03**	0.11*	0.43
	(0.06)	(0.01)	(0.06)	(0.25)
OnePager * Quarter 3	0.03	0.02**	0.13***	-0.04
	(0.08)	(0.01)	(0.05)	(0.32)
OnePagerCUC * Quarter 3	0.03	0.04***	0.18***	0.45
	(0.06)	(0.01)	(0.06)	(0.28)
OnePager * Quarter 4	-0.05	0.01	0.09*	$0.22^{'}$
	(0.07)	(0.01)	(0.05)	(0.39)
OnePagerCUC * Quarter 4	$0.07^{'}$	0.04***	0.19***	0.73*
	(0.05)	(0.01)	(0.06)	(0.37)
Observations	34,894	86,647	15,878	19,947
County fixed effects	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES
Mean control group	0.398	0.0569	0.326	9.431
SD control group	0.490	0.232	0.469	3.152

Overall, these results paint a picture of a growing formal sector, in line with a structural change.

Speed of Justice Impacts Share of White Collar Jobs

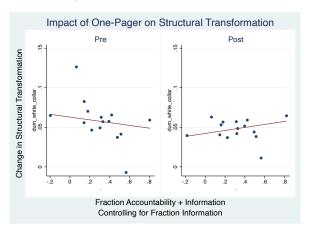


7% in "white collar" occupations

34% work in white collar as opposed to blue collar activities

14% have a written contract

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Sub-national experiment in reforming courts

- ▶ (1) data science can be used to identify the sources of delay and generate actionable recommendations
- ▶ (2) overcoming information frictions (with nudges)
- ▶ (3) but accountability is key, not just information
 - ★ top down & bottom up
- 3 pp reduction in adjournments
 - 20% reduction
 - ▶ Bigger effect on external adjournments (potentially frivolous)
- Contract enforcement may explain impacts of judicial efficacy
 - firms in contract intensive industries wrote more contracts
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Impact of Free Legal Search on Rule of Law: Evidence from Indian Kanoon

- Indian Kanoon launched in 2008
 - Free access
 - ► Easy searches for laws and decisions of higher judiciary
- We estimate the impact of Indian Kanoon on cases, courts and firms
 - ▶ Event-study framework that exploits the staggered rollout across states
 - ▶ Data: we scraped and coded all cases on Kanoon (1858-2020), eCourts (1979-2018), AIR (2000-2020)
 - ► Linked to Prowess firms database (1979-2020)
- Impacts:
 - ▶ 1--2% increased likelihood of case resolutions in the years after launch
 - ▶ 20-50% decline in case backlog in the years after the launch
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 - ► Linked to Prowess firms database (1979-2020)
- Impacts:
 - ▶ 1--2% increased likelihood of case resolutions in the years after launch
 - ▶ 20-50% decline in case backlog in the years after the launch
 - ▶ Lower court appeals 50% more likely to be overturned
 - ▶ Favorable effects on firm assets, declines in audit fees and bad debts

Event: Kanoon rolled out in stages

"bring knowledge of the law to the common people"

Keyword searches for automatic determination of most relevant clauses and judgments

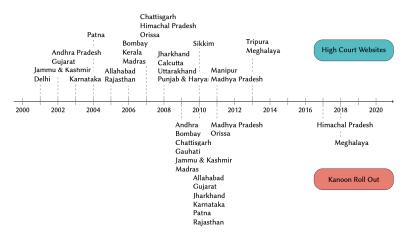


Figure: Roll Out Years for High Court Websites (top) and Kanoon (bottom)

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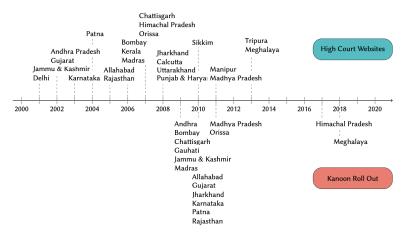
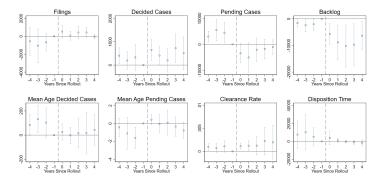


Figure: Roll Out Years for High Court Websites (top) and Kanoon (bottom)

Today, it is a "first-stop" for lawyers, 6 min per page, 2.9 M search queries and 1.5 M sessions per month

Aggregate Efficiency Measures of High Courts

$$Y_{ct}=lpha+\sum_{j=2}^4eta_j(lag_j)_{st}+\sum_{k=1}^4\gamma_k(lead_k)_{ct}+\mu_c+\lambda_t+\epsilon_{ct}$$
 (Sun and Abraham 2021)



Pending cases decline by 17% and backlog by 43%. Impacts on efficiency driven by first years after rollout, suggestive of straightforward cases being resolved more quickly.

Event study analysis of firm financials

Sizeable impacts on assets and reduction of bad debt reinforce the findings of a 12% increase in employment in an RCT of free legal information to South African firms. (Bertrand and Crepon 2021)

Elevated rate of overturning cases suggestive of firms' (vs. judges') access to precedent

 $Highlight\ the\ potential\ for\ open\ source\ /\ open\ access\ tools\ to\ be\ transformative\ for\ development$

Event study analysis of firm financials

$$Y_{cfst} = \alpha + \sum_{j=2}^{4} \beta_{j} (lag_{j})_{cfst} + \sum_{k=1}^{4} \gamma_{k} (lead_{k})_{cfst} + \mu_{s} + \delta_{f} + \lambda_{t} + \epsilon_{cfst}$$
 Firms with at least one case General equilibrium
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 - ► Effective Altruism (Peter Singer)
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selection

incentives

monitoring

SOft Skills (Deming 2017)

- EMPHASIZING UTILITY OF SOFT SKILLS FACILITATES THEIR PUTTING THEMSELVES IN ANOTHER SHOES (PERSPECTIVE-TAKING)
- Psychologists call this "Theory of Mind"
- Economists call this "Degree of Strategic Reasoning"
 - Measurement of human mental processes in a competitive interactive setting with the "beauty contest" game (Nagel 1995)
 - ▶ Investigates whether and how a player's mental processing incorporates the thinking process of others
 - ► High performance is associated with neural activity in the medial prefrontal cortex, successful mentalizing (Coricelli et al. 2009)

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- 1) prosocial behavior in lab and field
- 0.4-0.6 SD = effects of year-long mentoring program (Falk et al. 2018)
 - 2) blood donations, only when blood type is told

EFFECTIVE ALTRUISM

- coordination, cooperation, honesty, teamwork, and theory of mind SOFT SKILLS
- 4) orphanage visit, empathy book, grades on soft skills, policy choices

EMPATHY, CONFLICT MANAGEMENT, NEGOTIATION

RULE OF LAW, PREVENTING CORRUPTION

5) language of "we" social media

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- Future advisors to the President, Prime Minister, cabinet ministers, governors and police chiefs.
- "key wheels on which the entire engine of the state runs" (Central Superior Services, 2019)
- Select 1.5% of test-takers
 - ▶ 14,521 candidates => 213 qualified (Feb 2019)
- Mandatory attendance and high-stakes
 - Newly inducted civil servants
 - ► All emails sent by Director of Civil Service Academy (CSA)

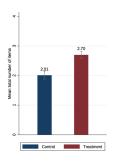
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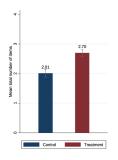
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- Empathy vs. power lectures impacted survey responses (in a list experiment)



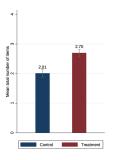
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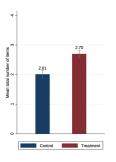
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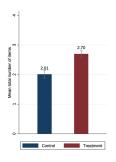
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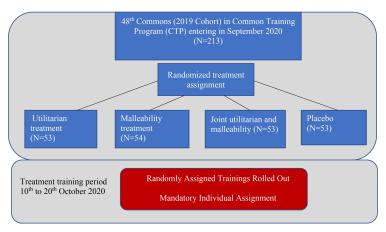
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Treatment Conditions

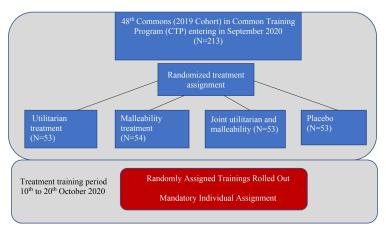
Before the first workshop



 $\label{eq:control} \begin{tabular}{ll} Utilitarian \times Malleability \times Both \times Control (macroeconomics) \\ Four treatments via a non-shareable / non-downloadable link \\ \end{tabular}$

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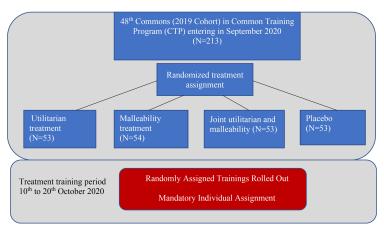


Utilitarian x Malleability x Both x Control (macroeconomics)

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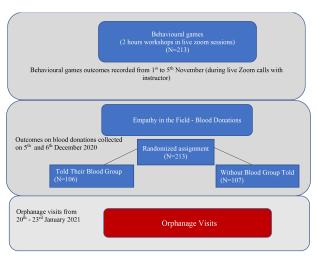
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scripted videos sent using oTree

Measurement of Outcomes

1-4 months later



What is empathy

- Puzzle: most profitable firms rank highly in empathy
 - Is cut throatiness not going to get you more profits?
 - Empathy can boost profit
 - ► Employees and employers with soft skills navigate complex relationships, satisfy client needs, and maintain employee trust and motivation
 - Every new hire is trained in a "Google Empathy Lab"
 - Employees put on virtual reality goggles and practice their perspective-taking or empathy
 - ► The employees are encouraged to take the perspective of homeless person and "see the world from the standpoint of the less fortunate"
 - So 21st century companies like Google may be investing in empathy to improve their profits.
- Qualitative and quantitative evidence backs the idea that empathy is beneficial.

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What is empathy

- Empathy is changeable and can be influenced over time
 - Researchers gave virtual reality goggles to people and made them take perspective of others (e.g. see the lives through the eyes of homeless people and beggars)
 - ► The level of empathy they showed to others increased both in surveys as well as high-stake decisions
- Qualitative and quantitative evidence backs the idea that empathy is not fixed but malleable. It is a skill that can be developed.
- Structure and transcript similar
 - Narratives about public figures
 - Quantitative evidence from scientific articles

GROWTH MINDSET (Yeager et al. Nature 2019)

SELF-IMAGE (Benabou-Tirole 2004; 2006; 2011)

Malleability has an ambiguous effect in this framework because behavior signals identity

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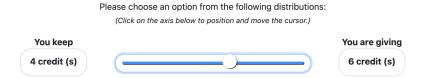
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Altruism

In this game, we allocate you 10 credits. Your task is to choose how many credits you want to keep for yourself and how many you want to give to another participant.



• "dictator" voluntarily send money without clear benefit (Kahneman et al. 1986)

Charity

In this game, we offer you to make 5 choices. Only one of these choices will be used to determine the credits received if you are drawn.

For each of the choices, you must choose between receiving the credits or donating the credits to UNICEF. If you are drawn, we will transfer your donation to UNICEF and purchase measles vaccines.

Measles is an extremely infectious disease that spreads very quickly in densely populated spaces. In vulnerable children, the disease is often fatal (more than 100,000 deaths per year worldwide), and can cause long-term physical or mental damage. UNICEF conducts major immunization campaigns, especially after natural disasters and other emergencies, to prevent the spread of the disease.

For each row, please choose one of the two options:

1) \circ I receive 2 credits; no donation to UNICEF \circ donation of 10 credits to UNICEF; no credits for me
2) O I receive 4 credits; no donation to UNICEF O donation of 10 credits to UNICEF; no credits for me
3) O I receive 6 credits; no donation to UNICEF O donation of 10 credits to UNICEF; no credits for me
4) O I receive 8 credits; no donation to UNICEF O donation of 10 credits to UNICEF; no credits for me
5) O I receive 10 credits; no donation to UNICEF O donation of 10 credits to UNICEF; no credits for me

"charity" game (Bettinger and Slonim 2006)

Cooperation

Decision on your part

You must decide how much of this initial endowment you wish to transfer to the other participant (between 0 and 1 credit). The transferred quantity will be <u>doubled</u> and the other participant will receive this doubled quantity. What you choose not to transfer remains in your possession but will not however be doubled.

Exemple de votre décision



Decision (simultaneous) from your partner

The other participant simultaneously makes the same decision. He decides how much of his initial endowment he wishes to transfer to you (between 0 and 1 credit). You will receive double this transferred amount.

Coordination

Each round, each of you has the choice between two options: A and B.

Your winnings are shown in the table below (your winnings are in blue, your partner's in black)

		L'autre participant	
		Action A	Action B
Nous	Action A	3 crédits, 3 crédits	3 crédits, 0 crédits
	Action B	0 crédits, 3 crédits	5 crédits, 5 crédits

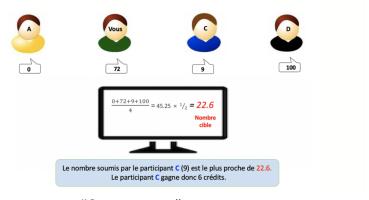
Theory of Mind

Each round, each party member submits a number between 0 and 100. Single digit decimal numbers are allowed.

The computer then calculates the average of the 4 proposed numbers, then multiplies this average by a half.

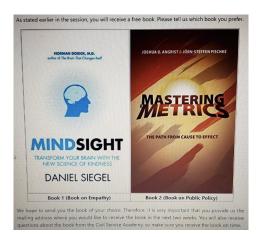
This gives a "target number" as illustrated below.

The member of the group whose proposed number is closest to the target number earns 6 credits.

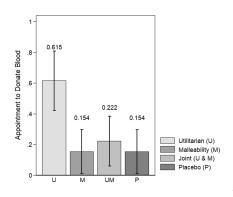


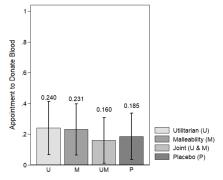
"Guessing game" (Nagel 1995)

Book Choice (lottery)



Impact on Effective Altruism

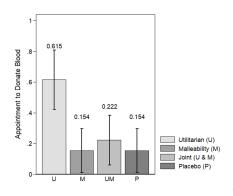


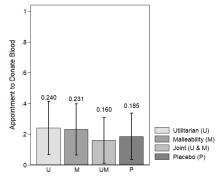


- "Blood for group O negative is urgently needed at the blood bank"
- "Blood is urgently needed at the blood bank"

Only for matching blood type

Impact on Effective Altruism

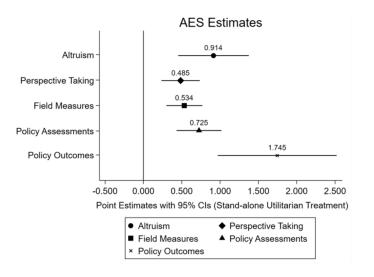




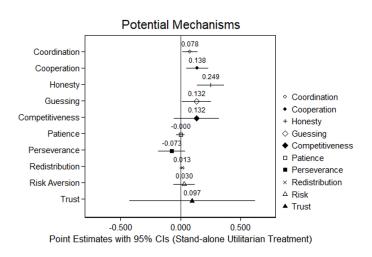
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Recap



Mechanisms



- TRAINING HIGH-STAKE DECISION-MAKERS IN BENEFITS OF SOFT-SKILLS/SOCIAL SKILLS INCREASES THEIR SOFT-SKILLS/SOCIAL SKILLS
 - altruism, blood donations, cooperation, coordination
- EMPHASIZING UTILITY OF SOFT SKILLS FACILITATES THEIR PUTTING THEMSELVES IN ANOTHER SHOES (PERSPECTIVE-TAKING)
 - ▶ theory of mind, empathy choice, orphanage visit, soft skills grades
 - learning, not just priming
 - altruism, not just fairness
 - effective altruism, not just altruism

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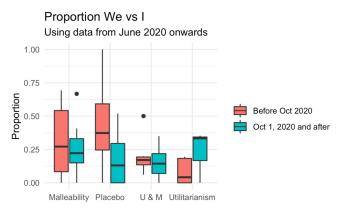
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Impact on Thought Leadership

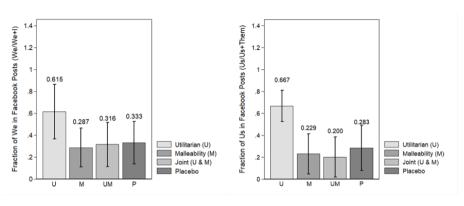
Preliminary evidence in twitter feeds



increase % of "We" vs. "I"

Impact on Thought Leadership

Also seen in Facebook posts ("We" vs. "I")



increase % of "us" vs. "them"

- Utilitarian version of empathy training yielded
 - ▶ Similar effect size as year-long mentoring program (Kosse et al., 2020)
- Improves pro-social behavior
 - Altruism and charitable donations
- coordination, cooperation, honesty, teamwork, theory of mind in strategic dilemmas
 - ► Skills essential for teamwork
- Increases blood donations (for matching blood type)
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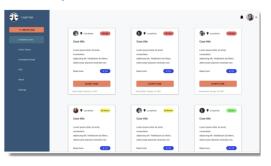
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Human-centric AI in justice

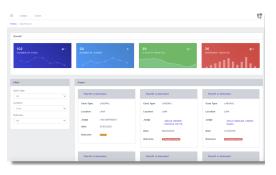


Reduces pendency of cases and increases the efficiency of courts by facilitating the optimal assignment of cases to judges in courts where there are backlog and delays

The App follows a similar model to Uber, where the "drivers" are judges and the "customers" are case administrators, or those who manage and assign cases

Instead of using "smart" assignments that do not incorporate judges' own preferences and information about their own skills, human centric Al assumes that every agent/judge has private information and reacts to incentives. Given their information advantage, it is often better to let a judge make their own decisions. Importantly, carefully designed incentives can help shape a judge's decision to optimize outcomes...

Personalized case-based teaching



Leverages the history of the judge's own written decisions to evaluate how such judge would decide on a similar case in comparison to a curricular example or to other similar decisions by peer judges

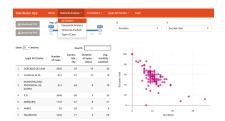
Brings case-based teaching to the next level, providing users with a personalized training that has the potential to improve the quality and efficiency of judicial training and judicial decisions

Help create culture of precedent

Building Capacity

Open source no-code tools for

Data entry and decision-support



Learning best practices



Understanding justice needs



Increasing recognition-respect

