**Research, Teaching and Service Statement**
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## Research

It is increasingly recognised in the economics literature that state capacity, for example the state's ability to deliver public services and collect taxes, is a fundamental determinant of economic development. This is a rapidly growing area of research that has only recently attracted sustained attention from leading scholars and international organizations such as the World Bank, which established its Bureaucracy Lab to advance this agenda. My research contributes to this broader literature on state capacity and development.

Drawing on political economy, organizational economics, and comparative politics, and informed by over a decade of prior experience as a bureaucrat in Pakistan, I examine how governments organize and carry out their core functions, with a particular focus on state bureaucracies in developing countries. I combine observational and experimental methods with novel administrative datasets to uncover the mechanisms driving bureaucratic behavior and public service delivery. My research spans Pakistan, Benin, Guinea-Bissau, and the United States, and speaks directly to policy debates on governance reform, public administration, and service delivery.

My work has two main interconnected strands. The first investigates how formal and informal structures within state bureaucracies interact to shape what governments can (and cannot) do. I pay particular attention to how bureaucrats' informal authority, reputations, networks, and shared beliefs can compensate for weaknesses in, or alternatively undermine, formal institutions. The second examines how the organizational design of government programs — including how public programs are structured, who delivers services, and what screening requirements are imposed on beneficiaries of public subsidies — affects the achievement of program goals. A central motivation is that governments in developing countries operate under severe resource constraints; my research therefore focuses not on what more spending could achieve, but on how existing institutions can be better understood and, where possible, redesigned to improve outcomes.

Together, these strands contribute to understanding why formal institutions so often fail to deliver on their promise, and how, when working within existing constraints, their performance can be improved through what I term “institutional edits”: small, low-cost modifications to existing rules and arrangements that, by reshaping incentives, beliefs, or organizational structure, can generate meaningful gains without a wholesale institutional overhaul.

A third and growing strand of my research extends these questions to gender and diversity. I examine how informal mechanisms such as discriminatory norms, stereotypes, and social signaling concerns, as well as organizational design choices including team composition, coordination mechanisms, and technology, shape opportunities for women and organizational outcomes.

## 1. Informal Structures and State Capacity

A large literature on state capacity has focused on formal interventions to improve bureaucratic performance, including performance pay, monitoring, and audit systems. My research takes a different approach by examining the role of informal authority, social ties, norms, and shared beliefs and expectations in shaping bureaucratic behavior beneath the surface of official institutions. This informal dimension of state capacity influences bureaucratic performance in multiple ways: formal reforms can backfire when they ignore or disrupt existing informal arrangements; informal structures can produce surprisingly meritocratic outcomes even in corrupt environments; and informal organizational environments can themselves be deliberately reshaped to improve performance. Understanding these informal structures, I argue, is essential to understanding what states can actually do.

### *When Digitization Backfires*

Existing literature often views technological reforms as an effective way to strengthen state capacity. In "Spillovers in State Capacity Building: Evidence from the Digitization of Land Records in Pakistan", joint with Clement Minaudier (City St George's, University of London), *American Economic Review,* 2026, we show that such reforms can generate unintended negative consequences through the bureaucratic reorganization they induce. Using administrative data on agricultural taxation, satellite data on cultivated area, and surveys of local bureaucrats and farmers from Punjab, we exploit the staggered rollout of land records digitization to show that it led to a significant decline in tax collection.

The mechanism we identify operates through changes in informal authority within the bureaucracy. Prior to digitization, local revenue officials controlled both land records and agricultural tax collection. Control over land records gave officials informal leverage over farmers, which they used to enforce tax compliance. Digitization transferred land records to a separate agency, removing this source of leverage. At the same time, it displaced bribe extraction from land record management toward tax assessment, increasing collusion between officials and taxpayers. As a result, bureaucrats issued lower tax demands and collected a smaller fraction of those already reduced demands, producing a 47 percent decline in tax collection despite no measurable change in the tax base. The findings show that investments in technology alone are insufficient to strengthen state capacity: informal organizational arrangements within bureaucracies matter, and reforms that ignore them can undermine the very capacity they are intended to build.

### *Informal Fiscal Systems in Developing Countries*

A central assumption in much of the state capacity literature is that taxation and public service provision operate through formal fiscal systems. Yet in many developing countries, local governments rely on informal systems in which bureaucrats finance public services partly through extracted bribes. In "Informal Fiscal Systems in Developing Countries", joint with Clement Minaudier (City St George's, University of London) and Sandip Sukhtankar (UVA), *Journal of Development Economics,* 2026, we document and analyze a widespread but understudied phenomenon: in at least twenty countries, local bureaucrats are expected to finance gaps in public service provision and do so, at least partially, through extracted bribes. Using Pakistan as a detailed case study, and drawing on original survey data from village bureaucrats and their supervisors as well as government accounts, we show that this informal fiscal system is not an aberration but a stable institutionalized arrangement. We develop a model of bureaucratic agency in which governments face both moral hazard—because it is difficult to monitor whether bureaucrats are extracting bribes—and adverse selection—because it is hard to screen for their ability and honesty at the point of hiring. We use this model to explore when governments benefit from sustaining such systems and what their implications are for welfare and bureaucrat selection.

Our analysis yields three main results. Informal fiscal systems are more likely to emerge when corruption is widespread, but when public service delivery is relatively easy to monitor. In such systems, the conditions exist under which it is easier to incentivize dishonest bureaucrats to redirect bribes toward services than to prevent extraction altogether. Also, such systems are self-reinforcing, as dishonest bureaucrats are more willing to extract bribes, fund more services, and are more likely to be retained, and their prevalence, in turn, sustains the informal system. Finally, political frictions, which arise when politicians favor certain groups over others in formal taxation in order to secure votes, amplify these dynamics, allowing politicians to shift the effective tax burden onto other groups and making such systems even more likely to persist. Informal fiscal systems may therefore provide a second-best response to informational and political constraints. However, they also generate significant distortions: public service funding falls below the social optimum, the incidence of the tax burden can become more regressive, and, most crucially, they legitimize bribe-taking, serving as a gateway to more corruption. As supervisors of local bureaucrats in Pakistan explained in our surveys, officials were willing to provide unfunded public services precisely because doing so gave them a justification for collecting bribes. The paper thus highlights the complex trade-offs involved in reforming fiscal systems and the risks of anti-corruption interventions that ignore the service-delivery function of informal fiscal systems.

***Merit and Informal Reputation in Pakistan's Civil Service***

Existing studies suggest that in developing countries, where entrenched corruption norms, low transparency and pervasive patronage prevail, discretion tends to be a source of patronage and inefficiency rather than a tool for good governance. In "Meritocracy in a Bureaucracy", *Journal of Development Economics,* 2025, I show that meritocratic selection can nonetheless emerge in such a setting, even in the absence of formal incentives to promote it. Using unique data on the abilities of junior officials and their social ties to senior officials responsible for promotions within the Pakistan Administrative Service (PAS), I find that senior officials are more likely to promote high-ability juniors over those with social ties to them, despite pervasive corruption and limited formal incentives. I also identify the circumstances under which meritocratic promotions are more likely to occur, with evidence suggesting that senior officials' concern for their reputations among peers plays an important role. This suggests that discretion, under certain conditions, can lead to improved outcomes. Rather than imposing rule-based decision-making, policymakers may therefore do better by understanding and working with the informal arrangements within bureaucracies, aligning decision-makers' incentives with organizational goals rather than eliminating discretion altogether.

***Bureaucratic Beliefs about Organizational Performance***

A large literature on bureaucratic performance focuses on changing individual incentives and ability through performance pay, monitoring, and selection, while largely taking the institutional environment as fixed. My research examines a complementary policy lever: changing the institutional processes, or the "rules of the game," within which bureaucrats operate. One such rule is the organization's information structure. While information on individual performance is often difficult to obtain in bureaucracies, governments routinely generate information about the performance of the organization as a whole through audits, inspections, and citizen surveys. Yet this information is rarely used to shape beliefs and behavior within the bureaucracy itself.

In "Bureaucratic Deliberation and Performance: Evidence from a Field Experiment in Benin," joint with Leonard Wantchekon (Princeton University) and Lazare Kovo (Emory University), we test whether changing this information structure can improve bureaucratic performance. In partnership with the Government of Benin, we introduce deliberation as an institutional process in which objective, performance-relevant information about the bureaucracy as a whole, rather than about individual officials, is made public within the organization and discussed collectively. We conduct a randomized controlled trial across municipal administrations and, using administrative audit data from 2014 to 2019, find that deliberation increases municipal performance by 8.7 percent of the control mean. The gains are broad-based: deliberation reduces financial irregularities, shifts procurement toward more competitive procedures, improves project implementation, and reallocates investment toward citizen-facing services, all without additional resources or changes in formal incentives.

Deliberation also reshapes the organizational environment. Bureaucrats come to perceive more corruption and weaker rule enforcement, these changes in beliefs spread beyond those who directly participated in the deliberation, and beliefs become more aligned within municipalities. Internal discussions shift toward audit findings and corruption, while interpersonal trust declines. Together, the results show how a relatively small change in the rules governing how information is shared and discussed within an organization can alter beliefs and generate meaningful improvements in bureaucratic performance.

***Digitization and Trust in the State***

Citizens' trust in the state is widely regarded as foundational to government effectiveness: it is thought to underpin voluntary tax compliance, cooperation with public health measures, and citizens' willingness to make claims on the state, yet surprisingly little research has examined whether citizens' own service encounters, particularly with digitized and modern delivery systems, can shape that trust. In "Digitization and Trust in the State", joint with Claudio Ferraz (University of British Columbia) and Ikram-ul-Haq (Director General, Punjab Land Records Authority (PLRA)), work in progress supported by the International Growth Centre (~$40,000), I examine whether citizens' direct experiences with digitized public services increase their trust in the state and their willingness to engage with it. Working in direct partnership with the PLRA, we use a spatial regression discontinuity design that compares landowners on either side of village boundaries where digitization status changes. If digitization of services builds trust, the social returns to digitization would be substantially larger than estimates focused on service efficiency alone.

## 2. Organizational Design and Public Service Delivery

Even where bureaucrats are well-motivated and capable, poorly designed programs and delivery systems can undermine their efforts. My second strand of research examines how deliberate choices about organizational and program design, including what screening requirements to impose on public subsidy applicants, whether and how many providers should deliver a service, and how property rights are allocated between public and private actors, shape outcomes for citizens. Across these projects, a common theme is that relatively small changes to existing organizational rules and institutional arrangements can generate meaningful improvements in public service delivery. More broadly, these papers examine how governments can strengthen performance through targeted modifications to existing systems rather than through large new expenditures or wholesale institutional reform.

***Designing Public Subsidy Programs***

Targeting public subsidies effectively is a persistent challenge: screening requirements such as documentation, certifications, or other administrative steps that applicants must complete to access benefits can deter fraud but may also burden legitimate beneficiaries and slow the delivery of aid. In "Screen Now, Save Later? The Trade-Off between Administrative Ordeals and Fraud", joint with Daniel Gingerich (Department of Politics, UVA) and Sandip Sukhtankar (UVA), conditionally accepted at the *American Economic Journal: Economic Policy*, 2026, we develop a theoretical framework characterizing when the fraud-deterrence benefits of such screening requirements outweigh their compliance costs, and test its predictions using the Paycheck Protection Program (PPP), an $814 billion COVID-19 relief program that disbursed 11.5 million loans to small businesses.

We exploit a policy change in the second phase of the PPP that required upfront financial documentation for loans above $150,000 but not below, a requirement absent during the program's first phase. Our model predicts that when screening deters fraud more than it burdens legitimate applicants, fraudulent firms will disproportionately reduce their loan requests to just below the documentation threshold, generating "bunching" below the cutoff. We find exactly this pattern: in phase 2, borrowers cluster just below the $150,000 threshold, and firms with prior irregularities are significantly more likely to bunch than legitimate firms, confirming that the fraud-deterrence benefits of screening were large relative to its compliance costs. Screening reduced loan irregularities by up to 68 percent and prevented at least $832 million in fraudulent disbursements. As large-scale emergency programs become more frequent in response to economic and climatic crises, these findings offer practical guidance for policymakers on designing subsidy programs that deter fraud without excluding those they are meant to serve.

***Property Rights, Privatization, and Public Service Delivery***

Urban waste management is becoming one of the central governance challenges facing developing countries. Cities are projected to generate 3.8 billion tonnes of solid waste annually by 2050, yet many lack the institutional capacity to manage waste collection and recycling effectively. Existing research has largely focused on household recycling behavior and technological solutions, with much less attention paid to how interactions between the state and the informal private sector shape waste collection and recycling outcomes. A core problem is that recyclable waste often functions as a contested commons: no clear property rights exist over who may collect and sell recyclable materials, generating agency problems between public sanitation workers and informal recyclers and leaving large quantities of valuable recyclable waste routed to landfills. In "The Political Economy of Urban Waste Recycling", joint work with Asim I. Khwaja (Kennedy School of Government, Harvard) and Shing-Yi Wang (Wharton), we are conducting a randomized controlled trial in direct partnership with the Lahore Waste Management Company (LWMC) across 262 union councils in Lahore. Our research tests whether formally assigning property rights over recyclable waste to different actors — including private agents, public workers, and hybrid arrangements — can improve recycling rates, environmental outcomes, citizen satisfaction, and trust in the state. Our intervention design has been presented to and approved by the Board of Directors of the Suthra Punjab Authority, the provincial government body overseeing waste collection and disposal initiatives across Punjab's 41 districts, creating a direct pathway to scale across a province of 127 million people. The project has been supported by the J-PAL Governance Initiative (~$225,000), the Weiss Fund (~$95,000), the International Growth Centre (~$50,000), and the PEDL program (~$50,000), with additional support from the Bankard Fund for Political Economy (~$35,000) and the Quantitative Collaborative (~$10,000) at UVA, with total funding exceeding $450,000.

***Structuring Bureaucracies for Service Delivery***

Government bureaucracies typically operate as local monopolies, leaving citizens with few alternatives when faced with delays, poor service, or corruption. While a large literature studies competition between public and private providers, and between private firms, much less is known about how competition between public providers shapes state performance. Theory suggests that introducing competition between government providers could improve performance by increasing citizens' outside options and reducing officials' ability to extract rents. Yet empirical evidence on these questions remains limited. In "Designing the State", joint work with Ikram-ul-Haq (Director General, Punjab Land Records Authority (PLRA)), we study how the organizational structure of public service delivery affects bureaucratic performance. Using administrative data from 2018 to 2025 covering the universe of land transactions in Punjab, Pakistan, we exploit the staggered rollout of additional government-run land service centers, which created variation in whether villages were served only by incumbent offices or also had access to an additional provider offering the same services. The project examines how competition between public providers shapes the speed of service delivery, citizen engagement with the state, and corruption within the bureaucracy. Ongoing work combines these administrative data with surveys of landowners and bureaucrats to better understand how competition affects service choice, corruption, and bureaucratic behavior.

## 3. Gender Diversity, and Organizational Design

A third strand of my research extends these questions to gender and diversity, examining how organizational environments and broader social constraints shape women's economic opportunities. This strand has two interconnected components. The first examines how organizational design choices — including team composition, communication structures, and patterns of advice-seeking — shape gender gaps in performance and advancement within organizations. The second examines broader barriers to women's economic and social participation, studying how discriminatory norms, coordination failures, and technological constraints affect women's opportunities and whether targeted interventions can help overcome them.

***Gender and Team Composition***

Existing work on diversity and team performance has largely examined diversity independently of team size, despite the fact that organizations jointly choose both. In "Team Size and Diversity", joint work with Alexia Delfino (Bocconi University) and Brais Álvarez Pereira (NOVA SBE), *Journal of Economic Behavior and Organization*, 2024, we conduct a lab-in-the-field experiment with university students in Guinea-Bissau and show that the performance gains from having a skill-diverse teammate are increasing in team size. We also find that demographic diversity — in gender, ethnicity, or religion — can attenuate this size premium, pointing to communication frictions as a countervailing force. The implication is that skill diversity and team size are not independent organizational design choices.

A fundamental question in organizational design and gender is whether gendered hierarchies generate systematic frictions in advice and information flows. In ongoing work, "Advisor Gender and Performance", joint with Alexia Delfino (Bocconi University), Clement Minaudier (City St George's, University of London), Brais Álvarez Pereira (NOVA SBE), and Shamyla Chaudry (Lahore School of Economics), supported by QC UVA ($10,000) — experiment and data collection complete, analysis ongoing — we study how gender shapes advice-seeking and advice-giving and how these dynamics contribute to performance gaps between men and women. Using a lab-in-the-field experiment with university students in Pakistan, we examine whether women seek less help, whether men provide less help to women, and whether inaccurate beliefs about the likelihood of receiving advice contribute to performance differences. We additionally vary whether tasks are stereotypically male- or female-coded, allowing us to study how subject-matter stereotypes shape advice flows across gender. Critically, we experimentally vary both individuals' ability to choose their own advisors and the incentives for providing help in order to identify the mechanisms driving these patterns and whether they can be mitigated through such organizational design features.

***Expanding Women's Economic and Social Opportunities***

A growing literature examines the barriers limiting women's economic and social opportunities in developing countries, including discriminatory norms, coordination failures, and unequal access to information and technology. My ongoing work contributes to this literature by studying whether targeted interventions can relax these constraints and expand women's participation in economic and social life.

In "Coordinating Female Entrepreneurs", joint work with Leonard Wantchekon (Department of Political Science, Princeton University) and Suman Zahra (Independent Researcher, Pakistan), supported by the International Growth Centre (IGC) (~$40,000), we study whether coordination failures prevent women entrepreneurs from collaborating despite potential gains from doing so, and whether structured interactions and information-sharing can help overcome these barriers. In "AI Saathi: An AI Companion for Women's Enterprise Growth and Emotional Wellbeing", joint work with Laura Barnes (UVA School of Engineering), supported by J-PAL Project AI Evidence (~$75,000), we examine whether voice-based AI tools can improve both business outcomes and psychosocial wellbeing for low-literacy women entrepreneurs in rural Pakistan. Both projects are conducted in partnership with the Punjab Rural Support Program (PRSP), Pakistan's largest rural development organization, which has extended 1.19 million microloans, 47% to women, across Punjab. Finally, in "Colorism and the Marriage Market", joint work with Siwan Anderson (University of British Columbia) and Ritika Gupta (Wageningen University, UVA PhD 2025), we study how colorism shapes marriage market outcomes and whether persuasion can shift related norms and beliefs.

Together, these projects examine how social norms, information frictions, and access to organizational and technological resources shape women's opportunities in developing countries. More broadly, they extend my research agenda on how institutional and organizational environments shape behavior and economic outcomes.

## Teaching, Advising, and Service

I teach at both the undergraduate and doctoral levels. At the undergraduate level, I teach Economic Development (ECON 4610), a course that engages students directly with frontier research and empirical methodology in development economics. The course trains students to evaluate evidence critically, reading estimation results alongside canonical texts, and to think like researchers. A central feature is a group project in which students design an original randomized controlled trial, walking through research design, identification strategy, and policy trade-offs. At the doctoral level, I teach Introduction to Mathematical Economics (ECON 5090), the intensive mathematics preparation course for all incoming Economics Ph.D. students, covering proof-writing, linear algebra, real analysis, multivariate calculus, and constrained optimization. Both courses have received consistently strong student evaluations.

I am actively engaged in graduate advising and mentorship. Among Ph.D. students I have advised to completion, two have been placed as Assistant Professors at research universities in 2025, and one is now a quantitative analyst at a major financial institution. At the master's level, a recent advisee joined the Federal Reserve Board as a Research Assistant. I am currently serving on the dissertation committee of Beatriz Silva da Costa, a Ph.D. candidate in the Department of Politics at UVA, whose work on public procurement and anti-corruption reform connects directly to my research agenda. I have an active record of mentoring pre-doctoral researchers. Of the thirteen research assistants I have supervised, three have gone on to doctoral programs at Cornell, Vanderbilt and ASU, six to master's programs at Cornell, Berkeley, Columbia, LSE, and Georgia Tech, among others, and one to a pre-doctoral program in Northwestern University. I have also mentored Pakistani high school students, three of whom are now pursuing undergraduate degrees at Oxford, Duke, and NYU. Beyond UVA, I mentor job market candidates through the Association for Mentoring and Inclusion in Economics (AMIE).

I contribute actively to departmental, university, and international service. I serve on the Distinguished Major Program (DMP) committee, evaluating undergraduate theses and participating in student selection. I organize the Development Workshop with colleagues from politics, public policy, and business school, and have previously organized the Political Economy and Economic History Reading Group (2023) in the Department of Economics. I am currently co-organizing "Bureaucracy Across Borders," an interdisciplinary invitation-only conference at UVA that brings together scholars of bureaucracy from economics, political science, sociology, history, and public policy from within UVA and across universities, with colleagues Gabrielle Kruks-Wisner and Rachel Potter in the Department of Politics, UVA.

I founded *Azad Soch* (meaning "Free Thought," 2023–2024), a research and public engagement initiative based in Pakistan that conducted original research on social issues and translated findings into films and evidence-based content to promote informed public discourse, which provided the foundation for the research paper "Colorism and the Marriage Market", joint with Siwan Anderson (UBC) and Ritika Gupta (Wageningen University).

I have also served on the scientific programme committee of the Society for Institutional and Organizational Economics (SIOE, 2021) at MIT. I referee regularly for top economics journals, including the American Economic Review, Econometrica, the Quarterly Journal of Economics, the Review of Economic Studies, and the Journal of Political Economy, among others.