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DOCTORAL STUDIES Massachusetts Institute of Technology (MIT)
PhD, Economics, Expected completion June 2025
DISSERTATION: “Essays on Firms and Technology in Development Economics”

DISSERTATION COMMITTEE AND REFERENCES

Professor Ben Olken
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Professor Tavneet Suri
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PRIOR EDUCATION Ecole Polytechnique and ENSAE ParisTech 2017
M.Sc. in Economics
Valedictorian, *Summa Cum Laude*

Ecole Normale Supérieure (ENS) Paris-Saclay 2015
B.A. in Economics
Valedictorian, *Summa Cum Laude*

CITIZENSHIP France

GENDER: Male

LANGUAGES English, French (native)

MIT Economics

DEIVY HOUEIX

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FIELDS	Primary Fields: Development Economics	
	Secondary Fields: Organizational Economics	
TEACHING EXPERIENCE	Development Economics: Macroeconomics (PhD, MIT 14.772) Teaching Assistant to Prof. Robert Townsend	2024
	Applied Economics for Managers (MIT Sloan Executive MBA, MIT 15.024) Teaching Assistant to Prof. Namrata Kala and Prof. Tavneet Suri	2024
	JPAL Development Methodologies Summer School, Abidjan and Rabat (African researchers and project leaders)	2022-23
RELEVANT POSITIONS	Research Assistant to Prof. Ben Olken and Prof. Rema Hanna, MIT	2020-23
	Research Assistant to Prof. Pascaline Dupas and Prof. Marcel Fafchamps, Stanford University	2017-19
	Research Assistant to Dr. Quy-Toan Do, World Bank Development Research Group	2016-17
FELLOWSHIPS, HONORS, AND AWARDS	MIT Sloan Africa Fellowship	2025
	J-PAL Fellowship	2024
	MIT Presidential Graduate Fellowship	2020
	Best Master's Thesis Award	2017
	Valedictorian, M.Sc. in Economics, Polytechnique/ENSAE	2017
	Full-Ride Academic Scholarship - Normalien	2014-18
	Valedictorian, B.A. in Economics, ENS Paris-Saclay	2015
RESEARCH GRANTS	<i>Total Grant Funding: \$1,479,412</i>	
	“Adoption and Impacts of Digital Payment Technologies” Private Enterprise Development in Low-Income Countries (PEDL), The Shultz Fund, The Weiss Fund, Digital Identification and Finance Initiative in Africa (JPAL DigiFI Africa)	
	“Relational Frictions Along the Supply Chain: Evidence from Senegalese Traders” Private Enterprise Development in Low-Income Countries (PEDL), The Shultz Fund, SurveyCTO Research Grant	
	“Financial Inclusion and Rural Electrification: Evidence from Togo” Private Enterprise Development in Low-Income Countries (PEDL) - Climate Change	
	“Eliciting Poverty Rankings from Urban or Rural Neighbors: Methodology and Empirical Evidence” Innovations for Poverty Action (IPA) - Research Methods Initiative	

“Digitalization of Local Tax Collection in Cote d’Ivoire”

USAID - Development Innovation Ventures (DIV), JPAL Governance Initiative

PROFESSIONAL ACTIVITIES

Referee: *American Economic Journal: Applied Economics, Journal of Development Economics, Economic Development and Cultural Change*

Service: *Co-founder of the Harvard/MIT Application Assistance Mentoring Program, which connects prospective students from underrepresented groups with graduate student mentors to increase diversity in economics.*

RESEARCH PAPERS

“Asymmetric Information and Digital Technology Adoption: Evidence from Senegal” (Job Market Paper)

The rise of digital technologies has the potential to reduce information asymmetry and reshape firm contracts. While these technologies can reduce moral hazard by making data observable to employers, they may also hinder adoption by employees concerned about losing informational rent. I combine two field experiments, guided by contract theory, to explore this trade-off through the expansion of digital payments in the Senegalese informal taxi industry. In the first experiment, I randomized access to a digital payment technology for 1,891 drivers and within this group, further randomized the degree to which transactions are observable by employers in a panel of 613 taxi owner-driver relationships. I find that digital payments reduce drivers' cash-handling costs by about half and serve as effective monitoring tools for taxi owners. Greater transaction observability increases worker effort, induces a shift toward more salaried contracts, and reduces turnover. However, adoption varies among workers: 50% of drivers — primarily the least productive and poorest — declined to adopt when observability was an option. The second experiment reveals that assuring these drivers that digital transactions would remain undisclosed to owners nearly doubles adoption rates. Using these experimental variations, I estimate a theoretical framework and evaluate the welfare impact of policy counterfactuals, such as mandating technology adoption or removing the observability embedded in payments. My findings highlight the trade-off between transparency and the adoption of digital technologies, emphasizing the need for policymakers and innovators to consider distributional impacts to broaden adoption and enhance firm growth.

“Relational Frictions Along the Supply Chain: Evidence from Senegalese Traders”

(with Edward Wiles)

Search and trust frictions have historically hindered the ability of small firms to access foreign input markets. However, the growth in smartphone ownership and social media usage has the potential to change this. We run a field experiment with 1,862 small garment firms in Senegal, in which we leverage social media to provide exogenous variation in search and trust frictions of

interacting with suppliers in Turkey. Our search treatment connects firms to new suppliers, and our two trust treatments vary the information about the types and incentives of these suppliers. To measure the impact on foreign market access, we mystery shop at all firms. Treated firms are 25% more likely to have the varieties the shopper requests and the goods supplied are 32% more likely to be high quality, driven by the search treatment. However, the trust treatments matter for longer-term outcomes: trust-treated firms are significantly more likely to develop these connections into relationships that persist beyond the study. These new relationships lead to increases in medium-run profit and sales, particularly among wholesalers in the upper tail. Overall, we show that social media plays a large role in how small firms manage supplier relationships and can be used to effectively alleviate search and trust frictions in accessing foreign inputs.

“Nationwide Diffusion of Technology Within Firms’ Social Networks”

I conduct a randomized experiment to study nationwide technology diffusion of a new digital payment technology in Senegal. By leveraging two novel sources of network data — mobile money transactions and anonymized phone contact directories covering the near universe of the adult population in Senegal — I identify three sets of spillovers from taxi firms randomized to receive early access to the technology: to other firms within the taxi industry; to other industries; and to other cities. I show that spillovers go beyond strategic complementarities, reflecting social learning facilitated by social ties and remote interactions.

“Eliciting Poverty Rankings from Urban or Rural Neighbors: Methodology and Empirical Evidence”

(with Pascaline Dupas and Marcel Fafchamps), Revised August 2024 for *Quantitative Economics*

We introduce a novel approach for eliciting relative poverty rankings that aggregates partial orderings reported independently by multiple neighbors. We first identify the conditions under which the method recovers more accurate rankings than the commonly used Borda count method. We then apply the method to secondary data from rural Indonesia and to original data from urban Cote d’Ivoire. We find that the aggregation method works as well as Borda count in the rural setting but, in the urban setting, reconstructed rankings from both the pairwise and Borda count methods are often incomplete and sometimes contain ties. This disparity suggests that eliciting poverty rankings by aggregating rankings from neighbors may be more difficult in urban settings. We also confirm earlier research showing that poverty rankings elicited from neighbors are correlated with measures of poverty obtained from survey data, albeit not strongly. Our original methodology can be applied to many situations in which individuals with incomplete information can only produce a partial ranking of alternatives.

“Financial Inclusion and Rural Electrification: Evidence from Togo”

(with Paul Brimble, Axel Eizmendi Larrinaga, and Toni Oki)

Despite recent advancements, most people in sub-Saharan Africa still lack electricity. While rural electrification has garnered policy attention, recent academic literature estimates low demand. We argue that high transaction and transport costs for paying electricity bills — a critical friction faced by rural households — partly explain this puzzle and weaken policy effectiveness. We examine the scattered rollout of two nationwide policies in Togo in 2019 to support this claim: a subsidy program for solar home systems and an expansion of mobile money agents. The subsidy, which nearly halved the price, doubled adoption rates, primarily among customers near mobile money agents. These customers could reduce their payment frequency and buy in bulk, due to lower baseline transaction costs. The follow-up mobile money agent expansion reduced transaction costs directly, leading to a decrease in payment frequency due to a large income effect. In this setting of high liquidity constraints, the ability to buy in bulk outweighed the benefits of cheaper consumption smoothing. Our findings highlight the complementary role of subsidies and financial inclusion in increasing access to essential services.

RESEARCH IN PROGRESS

“Internal Migration, Remittances, and Networks: Evidence from Senegal”

(with Edward Wiles)

We explore the relationship between internal migration, remittances, and financial and social networks in lower-income contexts, with a focus on Senegal. To establish new facts and causal evidence, we construct a unique dataset that links migration patterns to both remittance flows and social networks covering the near universe of Senegal's adult population, based on real-time GPS tracking of personal and business transactions and anonymized phone contact directories from the country's largest mobile money provider. We use this dataset to document patterns of migration and remittance flows to a high degree of spatial and temporal precision, and to explore how financial and social networks affect — and are affected by — these patterns, especially in response to economic or environmental shocks.

“Digitalization of Local Tax Collection in Côte d’Ivoire”

(with Pascaline Dupas)

Low tax capacity hampers the ability of municipalities in Côte d’Ivoire, as in many other countries, to provide quality public services for their populations. We study the impacts of the nationwide rollout of a digital tax system, through which municipalities will move to entirely cash-less tax collection. We explore the impact on total tax revenue, size of the tax base, spending (including public good provision), and local government accountability.