

Application to NBER Economics of Digitization Tutorial, March 2017

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Course of study

I am a fourth year PhD student at the Department of Economics, Northwestern University. My second- and third-year coursework focused on four areas – development economics, industrial organization, political economy, and econometrics. In particular, I attended classes taught by Lori Beaman and Seema Jayachandran (development economics); Aviv Nevo, Robert Porter, and William Rogerson (IO); Georgy Egorov and Nicola Persico (Political Economy); and Ivan Canay and Joel Horowitz (Econometrics). My main advisors at Northwestern University are currently Nicola Persico (chair), Seema Jayachandran, and Lori Beaman.

Research interests/projects

My general research interests are in development economics, political economy, and economics of digitization. NBER Economics of Digitization tutorial would be a great opportunity for me to engage with faculty and students who are interested in the latter field. It would be especially beneficial for me, since I am currently involved in the following two research projects, which directly relate to economics of digitization.

First, together with Ruben Enikolopov and Maria Petrova, I study whether social media had a causal effect on the incidence and magnitude of protests in the context of Russia in 2011-2012. Using quasi-random variation in cross-city penetration of VK, the most popular social media website in Russia, we find that cities with higher VK penetration experienced larger protests and had a higher probability of experiencing any protests at all. To address potential endogeneity problems, we use particularities of the VK diffusion process. We use the fact that first VK users were the students of St Petersburg State University (SPbSU) studying simultaneously with the VK founder, Pavel Durov. Tracing city origins of Durov's peers, and controlling for city origins of SPbSU students in cohorts before and after the VK emergence, we obtain a strong first stage. That is, cities that sent out more of their high school graduates to SPbSU in 2002-2006 had significantly higher VK penetration in 2011. Using this first stage in our IV estimation, we obtain large positive effects of social media on protest participation. We have been invited to revise and resubmit this paper at *Econometrica* in August 2016.

Second, together with Kirabo Jackson, I am working on a project titled "Can Online Off-The-Shelf Lessons Improve Student Outcomes: Evidence from A Field Experiment". In this paper, we argue that online off-the-shelf lessons could potentially be a highly scalable and low cost solution for improving teacher quality. We conduct a randomized control trial, where teachers were provided with licenses for highly engaging math lessons from Mathalicious. We find that providing access to Mathalicious lessons and promoting their use increased students' average math achievement by around 0.085 standard deviations, on average. The effects were larger for weaker classrooms (teachers), suggesting that "off-the-shelf" lessons were able to compensate for deficiencies in teacher skill. A cost-benefit analysis revealed that this intervention was much more cost effective than many well-known successful programs that aimed at improving teacher quality. The main reason is that this intervention was mostly done online. However, our paper differs significantly from the existing studies of online education (e.g. MOOCs), as our intervention examines how online materials could enhance teachers' offline performance, and does not consider online education per se. We are now preparing to submit this paper to a leading journal.

NBER Economics of Digitization tutorial would be an ideal place for me to discuss my existing research and less developed research ideas with like-minded faculty and students. I would be extremely grateful if you consider my application.