Maham Rasheed

Department of Economics, Northeastern University
302 Holmes Hall, 39-41 Leon St, Boston, MA 02115
rasheed.m@northeastern.edu | (631) 568-6620

Application for the NBER Digital Economics and AI Tutorial

Expression of Interest

The NBER Digital Economics and AI Tutorial aligns closely with my research, which examines how digital platforms and algorithms shape economic behavior, labor market outcomes, and gender disparities. AI tools are central to my work: I use large language models (LLMs) and image-generation tools to design experiments and to structure and analyze unstandardized data, for example by converting listings and images from Facebook Marketplace into a consistent product taxonomy and listing-quality indices. Deeper exposure to the AI methods in digital economics would directly strengthen this work, and the tutorial would give me a valuable opportunity to receive feedback on my ongoing projects.

Going forward, I want to study how AI can expand opportunities for underrepresented groups in low-income settings, from women entrepreneurs to students whose schooling is disrupted by natural disasters. As these projects are at an early stage, the tutorial would greatly help. I am eager to connect with researchers working on related questions, get feedback on my research designs, and explore potential collaborations.

I am also enthusiastic about attending the associated NBER Digital Economics and AI meetings. Hearing presentations of ongoing research and taking part in the discussions that follow would be an invaluable experience as a fourth year PhD student.

Education

Northeastern University, Boston, MA, USA

Ph.D. Economics — 2023–Present
Fields: Behavioral and Experimental Economics; Labor; Digital; Development
Committee Members: Bilge Erten (Chair), b.erten@northeastern.edu;
Shantanu Khanna, s.khanna@northeastern.edu
Awards: Distinction in PhD Macroeconomics Qualifying Examination,
Graduate Fellowship

M.S. Economics — 2024

Lahore University of Management Sciences (LUMS), Lahore, Pakistan

BSc (Hons) Economics and Mathematics (with Distinction) — 2022
Awards: Dean's Honor List

Research Interests

My research examines how gender dynamics shape labor market outcomes, with a particular focus on the role of digital platforms, market design, and algorithmic systems. I use randomized audit studies and large-scale digital trace data to study discrimination, bargaining, and economic interactions in both formal and informal markets, and I have additional experience with randomized controlled trials, quasi-experimental designs, and impact evaluations from my work as a research assistant.

I am researching on how platform design shapes economic interactions: how information frictions and behavioral biases affect bargaining and pricing in digital markets, how gender norms manifest in algorithm-driven environments, and how emerging AI tools influence labor supply, entrepreneurship, and market participation. One dissertation project compares negotiation-based and algorithmic ride-hailing platforms to identify how platform design and pricing mechanism affects gender disparities in pricing, safety, and service quality for female riders. Another examines algorithmic and customer-driven gender discrimination on social commerce platforms.

I am also interested in the impact of generative AI on labor markets and learning outcomes, and I am developing projects in this area: one on the adoption of sales chatbots by small, women-owned enterprises in low- and middle-income countries, and another on whether AI tools can help students recover learning lost during disaster-related school closures.

Select Works in Progress

Bargaining Dynamics and Gender Discrimination in Ride-Hailing Services

Abstract: Ride-hailing platforms have transformed urban mobility by expanding access to flexible, on-demand transport. For women, they offer more than convenience: in contexts where mobility constraints have historically been binding, they open pathways to greater independence and to social and economic opportunity. Yet pricing disparities, negotiation frictions, and safety risks continue to shape women's travel behavior and economic participation. This study investigates how platform design shapes gender gaps in pricing, safety, and service quality in Pakistan's ride-hailing market by comparing two contrasting models: one which sets fares algorithmically, and the other with a negotiation-based pricing on which riders propose fares and drivers can counter in real time. I will conduct a randomized audit experiment across multiple urban routes in Lahore, using matched male and female rider profiles that follow identical protocols. This design allows causal identification of gender differences in fares, wait times, cancellations, ride duration, ratings, and exposure to unsolicited advances on both platforms. Data will be collected during peak and off-peak hours to test whether discrimination varies with market thickness. By directly comparing negotiated and algorithmic pricing, the study will deepen our understanding of how platform design and market conditions interact to shape discrimination in digital transportation markets, and will provide evidence to guide the design of more inclusive mobility systems that support women's economic empowerment.

Gender Gap in Digital Commerce: Evidence from Facebook Marketplace

with Sher Afghan Asad - Data processing in progress

Abstract: Digital marketplaces have emerged as an important avenue for expanding women's economic participation by easing mobility constraints and reducing the constraints imposed by restrictive social norms. We construct a large-scale dataset of Facebook Marketplace listings in Pakistan by scraping listings from around 37 divisional headquarters and the federal capital. For each listing, we collect the title, description, images, posted price (and any discounted price), condition, location, and seller name. We also scrape seller profile characteristics (e.g., gender inferred from name, ratings, and responsiveness badges) and each seller's history of inactive and sold listings. A key methodological contribution is the use of large language models (LLMs) to convert unstandardized listing text and images into a consistent taxonomy of product categories and attributes. The pipeline produces (i) a product taxonomy (categories, types, and attributes), (ii) structured variables (e.g., make, model, and year where relevant), and (iii) listing-level quality indices, including a *Completeness* index (how much relevant product information is provided) and a *Marketability* index (how well the listing is presented). We use this dataset to study gender disparities in online commerce nationwide: whether female entrepreneurs participate in digital markets differently from men in their product choices, pricing behavior, and credibility and reputation signals; how sellers adapt their listing strategies, through

pricing and description style, to perceived local demand conditions; and how female entrepreneurs persist in or exit the market over time. By combining listing-level information with indicators of market structure, we also examine how gender gaps evolve with market thickness and competitive intensity. The analysis will provide rare evidence on the structural and behavioral constraints shaping women's participation in digital markets in a low-income country.

Algorithmic and Customer-Driven Gender Discrimination in Digital Marketplaces

with Sher Afghan Asad - pilot preparations in progress

Abstract: Digital marketplaces are often seen as a promising avenue for empowering entrepreneurs in developing countries. By lowering search costs, expanding access to geographically dispersed buyers, and reducing reliance on face-to-face interaction, online commerce can help overcome barriers that have long constrained firm growth. These features are especially valuable for women, who often face mobility restrictions, safety concerns, and social norms that limit their participation in brick-and-mortar markets. Yet evidence remains limited on whether digital marketplaces truly expand opportunities for women entrepreneurs or instead reproduce existing gender disparities in new forms.

This project asks whether digital marketplaces act as engines of inclusion or reinforce existing inequalities, focusing on gender discrimination on Facebook Marketplace, one of Pakistan's largest online commerce platforms. We will conduct a randomized audit experiment that posts identical product listings under experimentally controlled male and female seller profiles. We measure gender differences in pecuniary outcomes, such as buyer interest, offers, and completed transactions, and in non-pecuniary outcomes, including unsolicited advances and harassment. Comparing minimal- and full-information listings allows us to distinguish belief-based (statistical) discrimination, which should narrow when buyers have more information about the product, from taste-based discrimination, which reflects preferences and should persist. Differences in listing visibility and engagement further allow us to detect algorithmic bias in how the platform displays male and female sellers' posts.

Grants

CEPR–PEDL	GBP 39,240	2025	Gender Discrimination in Digital Marketplaces
LUMS	PKR 1,500,000	2025	Gender Discrimination in Digital Marketplaces

Other Research Experience

Northeastern University — Graduate Research Assistant 2026–Present

Contributing to research on AI and learning outcomes, and on behavioral responses to failure and feedback.

Pakistan Institute of Development Economics (PIDE) — Research Associate 2023

Iqbal, N., Jalal, A., Mahmud, M., & Vyborny, K. (2026). *What Happens When Women Suddenly Stop Receiving Cash Transfers? Journal of Public Economics, 257*, 105618.

Iqbal, N., Jalal, A., Mahmud, M., & Vyborny, K. (2026). *Collecting Accurate Data on Intimate Partner Violence: Learnings from Pakistan* World Bank. Learnings from Pakistan

Lahore University of Management Sciences (LUMS) - Research Assistant 2022

Rasheed, M., Nayab, T., & Hasan, S. (2022). *Climate and Environmental Crisis: A Ray of Hope Through Uptake of Electric Bikes.* Mahbub ul Haq Research Centre, Lahore University of Management Sciences.

Asad, S. A., Ahmad, H. F., & Majid, H. (2025). *Price and Prejudice: Gender Discrimination in Online Marketplaces. Journal of Development Economics, 177*, 103540.

Shahid Javed Burki Institute of Public Policy, Lahore, Pakistan — Research Intern 2021