

Abiodun M. Musbaudeen

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Education

Ph.D. in Economics, Binghamton University (SUNY) Expected May 2027
Dissertation: *Essays on Digitalization, Productivity, and Markup*
Committee: Subal C. Kumbhakar (chair), Ivan Korolev, Yingjun Su
M.Sc. in Economics, University of Lagos, Nigeria 2017
B.Sc. in Economics, University of Lagos, Nigeria 2014

Research Interests

Empirical Industrial Organization; Applied Microeconomics.
Focus: firm productivity, firm and industry dynamics, and structural production-function identification.

Honors and Awards

Best Third-Year Paper Award (co-recipient), Department of Economics, Binghamton University 2025
Graduate Teaching and Research Assistantship, Binghamton University 2022–2027

Publications

Causal Forests versus Penalized Splines for Heterogeneous Treatment Effects

Ivan Korolev, Abiodun Musbaudeen, and Nancy Dhameja. 2026.
Economics Letters 268: 113205. doi:10.1016/j.econlet.2026.113205

The Scale–Technology Paradox: Technological Progress and Productivity Decline in Nigerian Banking

Abiodun M. Musbaudeen and Subal C. Kumbhakar. 2026.
Economic Modelling, 107859. Journal article; replication code.

A control-function input distance model for 17 banks over 2000–2023 separates productivity from technical change. Productivity declined by 3.5% annually on average despite cost-reducing technical change and estimated returns to scale of 1.46.

Job Market Paper

Digitalization, Factor-Biased Productivity, and Market Power

With Subal C. Kumbhakar.

Separates labor-augmenting productivity (labor efficiency due to technical change) from Hicks-neutral productivity and allows for imperfect competition. Uses the Encuesta Sobre Estrategias Empresariales (ESEE), an annual firm-level panel of Spanish manufacturing industries, for 2000–2019. Benchmark estimates associate digitalization with gains in both productivity components, especially labor augmentation among small firms, and show heterogeneous markup responses under imperfect competition.

Working Papers

Mediation Analysis in Production Functions with Unobserved Productivity

With Subal C. Kumbhakar. Under review, *Economics Letters*.

Develops a structural framework for direct and input-mediated effects when unobserved productivity confounds treatment, input choice, and output. Combines simulations with an application to Spanish manufacturing firms using the Encuesta Sobre Estrategias Empresariales (ESEE), 2000–2019 (estimation sample: 2001–2019).

Work in Progress

Regularization in Translog Production Models

Solo-authored.

Evaluates regularization methods by the accuracy and interpretability of production elasticities.

Artificial Intelligence and Spatial Factor-Biased Productivity

With Subal C. Kumbhakar.

Studies how AI adoption changes factor productivity and how effects spread across firms and regions.

Teaching Experience

Department of Economics, Binghamton University (SUNY)

Instructor

Statistical Methods

Summer 2025

Designed the syllabus and learning objectives; taught lectures, developed problem sets and data exercises, and assessed and graded student work.

Teaching Assistant

Introduction to Econometrics, Prof. Subal C. Kumbhakar

Fall 2026; Fall 2025

Lead econometrics TA sessions and R instruction; hold office hours.

Advanced Data Analytics, Prof. Ivan Korolev

Spring 2026

Corporate Economics, Prof. Charles Sebhara

Fall 2024

Principles of Microeconomics, Prof. Amarendra Sharma

Spring 2024

Introduction to Microeconomics, Prof. Wenya Wang

Fall 2023

Macroeconomics, Prof. Kenny Christianson

Spring 2023

Intermediate Microeconomics, Prof. Amarendra Sharma

Fall 2022

Presentations

Southern Economic Association Annual Meeting (*scheduled*)

November 2026

North American Productivity Workshop (NAPW)

2025

Professional Experience

Data Engineer and Business Intelligence Analyst, Mindshare (WPP Media), New York

2021–2022

- Built 43 ETL pipelines consolidating international campaign and spending data; unified reporting across social-media and Adobe Analytics sources and automated Tableau and Power BI reports for global decision-makers.

Head of Data Science and Engineering, Konga eCommerce Group, Nigeria

2021

- Led a five-person data science and engineering team; directed machine-learning customer segmentation and translated results into targeting and engagement recommendations for senior management.

Senior Data Scientist and Data Engineer, First Bank of Nigeria Ltd., Nigeria

2018–2021

- Built more than 50 data pipelines and applied machine learning to segment approximately 23 million customer accounts; developed dormancy and channel-choice models to inform retention and service decisions.

Data Research Analyst, West Africa Vocational Education, Nigeria

2018

- Analyzed trainee retention and employment outcomes to inform admissions decisions; designed questionnaires and compared outcomes for program and non-program candidates.

Computing and Methods

Programming: R, Python, Stata, SQL, $\LaTeX$, Git.

Data and visualization: Snowflake, Oracle, Azure Data Factory, Azure Synapse Analytics, Tableau, Power BI.

Methods: GMM, instrumental variables, control functions, production and distance functions, stochastic frontier analysis, panel data, causal mediation, causal forests, difference-in-differences, synthetic control, regression discontinuity, bootstrap inference, simulation, and regularization.

References

Subal C. Kumbhakar

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Ivan Korolev

Assistant Professor; committee member
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Yingjun Su

Assistant Professor; committee member
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All references: Department of Economics, Binghamton University (SUNY).