

Updated June 19, 2020

# Emmanuel Selorm Tsyawo

Department of Economics  
Temple University  
Ritter Annex 873  
1301 Cecil B. Moore Ave  
Philadelphia, PA 19122

[estsyawo@temple.edu](mailto:estsyawo@temple.edu)  
<https://estsyawo.github.io>

*Citizenship:* Ghana

*Graduate Coordinator:*

Ms. Linda Wyatt,  
+1 215 204 6638, [ldwyatt@temple.edu](mailto:ldwyatt@temple.edu)

---

## Education

Ph.D., Economics, Temple University, 2020

Dissertation: “Estimating R&D Interaction Structures and Spillover Effects”

Committee: [Brantly Callaway](#) (Chair), [Oleg Rytchkov](#), [Charles Swanson](#), [Austin Bean](#)

B.A., Economics and French (First Class), University of Ghana, Legon, 2013

Exchange Programme, Université d’Abomey-Calavi, Cotonou, Benin, 2011/2012

## Research Interests

Microeconometrics and Empirical Industrial Organisation

## Working Papers

1. [R&D spillover effects on firm innovation - Estimating the spatial matrix from panel data](#), (Job Market Paper)

**Abstract:** Firms’ research and development (R&D) efforts are known to have spillover effects on other firms’ outcomes, e.g., innovation. Quantifying R&D spillover effects requires a spatial matrix that characterises the interaction structure between firms. Estimates can be biased if the spatial matrix is misspecified. This paper proposes a parsimonious approach to estimating the spatial matrix and parameters from panel data, when the spatial matrix is partly or fully unknown. The approach is robust to misspecification of the spatial matrix, and it is applicable to single index models. It allows asymmetry and time-variation in the spatial matrix. The paper establishes consistency and asymptotic normality of the MLE under conditional independence and conditional strong-mixing assumptions on the outcome variable. On firm innovation, I find positive spillover and private effects of R&D. I provide evidence of time-variation and asymmetry in the interaction structure between firms and find that geographic

proximity and product market proximity are relevant. Moreover, connectivity between firms is not limited to often-assumed notions of closeness; it is also linked to past R&D and patenting behaviour of firms.

2. [Clustered Covariate Regression](#), (with Abdul-Nasah Soale) - *Presented at the Mid-West Econometrics Group Conference, October 2019*
3. [Bayesian Distribution Regression](#), (with Weige Huang)

## Work in Progress

1. A parsimonious approach to estimating the SAR spatial matrix from panel data
2. Policy spillover effects on student performance - Evidence from PISA (with Clara-Christina Gerstner)
3. The Externality of Poverty on the Incidence of Child Labour - Evidence from Ghana (with Sylvanus Gaku)

## Conferences

October 2019: Presenter, Mid-West Econometrics Group Conference, Columbus, Ohio

## Teaching

1. Temple University

Instructor, Principles of Macroeconomics, Fall 2018 & 2019, Spring 2019 & 2020

Instructor, Principles of Microeconomics, Summer I (2015 & 2016), Fall 2017

Instructor, Intermediate Microeconomics, Summer I, 2018

Teaching Assistant for [Prof. Michael Bognanno](#), Fall 2014 - Spring 2016

Teaching Assistant for [Prof. Michael Leeds](#), Fall 2016 - Spring 2017

2. University of Ghana, Legon

Teaching Assistant for [Dr. Abel Fumey](#), 2013-2014

## Software

**R packages:** `bayesdistreg` [[CRAN](#)] [[Website](#)] [[Github](#)] (with Weige Huang), `cluscov` [[CRAN](#)] [[Website](#)] [[Github](#)](with Abdul-Nasah Soale), `RpacSPD` [[Website](#)] [[Github](#)]

**C projects:** `metricsC` [[Github](#)], `RdotC` [[Website](#)] [[Github](#)],

**Fortran projects:** metricsFortran [[GitHub](#)]

Matlab, Stata, Octave, Python, L<sup>A</sup>T<sub>E</sub>X, Microsoft Office

## Languages

Ewe (mother tongue), English (fluent, official language of Ghana), French (fluent, DALF C2), Spanish (fluent, DELE B2), German (intermediate), Portuguese (intermediate), Twi

## Honors and Fellowships

1. Research Fellowship, Department of Economics, Summer 2019
2. Research Fellowship, Department of Economics, Summer 2017

## References

### **Prof. Brantly Callaway**

(Dissertation Advisor)  
Department of Economics,  
University of Mississippi  
Phone: +1 662 915 6942  
E-mail: [bmcallaw@olemiss.edu](mailto:bmcallaw@olemiss.edu)

### **Prof. Charles Swanson**

(Dissertation Committee Member)  
Department of Economics, TU  
Phone: +1 215 204 8168  
E-mail: [swansonc@temple.edu](mailto:swansonc@temple.edu)

### **Prof. Oleg Rytchkov**

(Dissertation Committee Member)  
Department of Finance, TU  
Phone: +1 215 204 4146  
E-mail: [rytchkov@temple.edu](mailto:rytchkov@temple.edu)

### **Prof. Austin Bean**

(Dissertation Committee Member)  
Department of Economics, TU  
Phone: +1 215 204 1680  
E-mail: [austin.bean@temple.edu](mailto:austin.bean@temple.edu)

### **Prof. Doug Webber**

Department of Economics, TU  
Phone: +1 215 204 5025  
E-mail: [douglas.webber@temple.edu](mailto:douglas.webber@temple.edu)

### **Prof. Michael Bognanno**

Department of Economics, TU  
Phone: +215 204 1680  
E-mail: [bognanno@temple.edu](mailto:bognanno@temple.edu)