

ECONOMIC CONTRIBUTIONS ANALYSIS

OF THE PURDUE UNIVERSITY
WEST LAFAYETTE CAMPUS

REMI Webinar: Measuring University Economic Impacts with PROSERIS

March 04, 2026

Economic Contributions and Impacts Analysis
Purdue University West Lafayette Campus 2024 by using
REMI Policy Insight+ v.3.2.1

Presented by: Indraneel Kumar, Ph.D., AICP

Introduction

- There is a need for colleges and universities to convey their economic value to the decisionmakers.
- The present study uses 2024 calendar year direct expenditure categories:
 - O&M (Operating expenses and maintenance include R&D expenditures): \$2.3 Billion
 - New construction and related expenditures (include consultants): \$65 Million
 - Off campus student expenditures: \$785 Million
 - Spending by visitors to athletic events who were not students: \$40 Million
- O&M based on the seven Integrated Postsecondary Education Data System (IPEDS) categories.
 - Instruction, scholarship and departmental research; academic support and services; operation, repair and maintenance of plants; office administrative services; auxiliary enterprises; public services; scientific R&D
- The study is based on expenditures. Revenues and monetized values of inventions and discoveries are not included.
- Similarly, Purdue Research Foundation (PRF) Research Park, Purdue Applied Research Institute (PARI) and multiple manufacturing establishments based on industry-university partnerships are not included.
- Local economic impacts of attendees to conferences, and visitors to convocations are not included.
- Increment in professional lifetime earnings of Purdue graduates are not included. Higher earnings by STEM disciplines than non-STEM disciplines.

Literature Review 1

- Impact analysis of universities requires a multifaceted approach unlike impact analysis of public infrastructure.
- The **land grant universities** have distinct mission for **teaching, research and discovery, and public engagement** through Agricultural and Engineering **Extension services** providing services to communities and regions.
- Most of the colleges and universities are operating since more than hundred years. Identifying new impacts to the local and regional economies from university operations can be challenging. Establishing a **counterfactual** or “how much the area is better or worse off with or without a university” (Siegfried, Sanderson and McHenry 2007).
- A few researchers suggested to incorporate **stochastic methods** (Monte Carlo Simulation) especially for expenditure areas such as student spending to improve the methodology (Pastor, Perez and Guevara 2013).
- General methodological approach suggested is: **Supply side** (university developing human capital, knowledge creation, etc.) vs. **Demand side** (university as a consumer spending on various goods and services).
- Economic impacts can be **generative** (new economic growth), **distributive** (relocating jobs and workers), and **transfer** (intergovernmental transactions between federal and state and local governments) (CS, Cervero and Aschauer 1998).
- Universities can create substantive **generative impacts** from external R&D dollars, new construction of labs and buildings, spending by out of town visitors, etc.).

Literature Review 2

- Generally, we know that economic impacts include assessment of direct, indirect and induced impacts.
- Such and linear and additive framework conceptually might not work for universities engaged in developing “**new knowledge**” and “**new skilled human capital**”.
- Computable/Applied General Equilibrium (CGE) with forecasting capacity is better than the Input-Output (IO).
- Potential increase in lifelong earnings of graduates remaining in the state happens in future years.
- There are questions with sporting events as well! Some researchers have found that considering “net” instead of “gross” economic activities resulted into modest impacts from sports events (Baade, Baumann and Matheson 2011).
- Some cautionary tips from the literature:
 - Appropriate **delineation of local and regional geography** for impact assessment (Siegfried, Sanderson and McHenry 2007; Pastor, Perez and Guevara 2013; Quddus et al. 2022)
 - Avoid **double counting** to ensure distribute spending in mutually exclusive categories (Siegfried, Sanderson and McHenry 2007)
 - Focus on **net economic activities** (Baade, Baumann and Matheson 2011)
- The missing piece in literature is on considering the new trend of **onsite, hybrid and remote** workers, and also a large number of students (working adults) enrolled in **online classes**.

Input Data 2024

- \$2.3 Billion contains R&D expenditures of \$394.5 Million.



\$2.3B
operations, maintenance, and R&D

\$785M
off campus student expenditures

\$65M
new construction

\$40M
athletic event visitor expenditures

- Fall 2024 Statewide Enrollment was **74,800**
- Fall 2024 West Lafayette Campus Enrollment was **58,000**
- Fall 2024 West Lafayette Purdue Employees was **19,027**
- Tuition fee is frozen for **14** consecutive years

**Fiscal expenditure data →
Annual estimates**

Data Collection and Model Details 1

- \$785 million off campus student expenditures are based on student spending surveys conducted by the university:
 - Spending on housing, food, books, transportation and miscellaneous activities were estimated for off campus
 - Spending on books, transportation and miscellaneous activities were estimated for on campus.
- Miscellaneous spending was distributed into various consumer spending categories based on assumptions.
- We knew ticket purchases by students and non-students in 2024:
 - Placer.ai was used to geofence Ross-Ade Stadium and all visitors spending 30-minutes or more were filtered
 - Placer.ai was used to collect visitors data for high profile and few general games during 2024
 - Placer.ai provides originating zip codes for visitors
 - The average proportions of visitors were estimated for Tippecanoe County, rest of Indiana, and rest of USA
 - The spending on food, fuel, and accommodations were estimated based on assumptions
- College amateur sports and athletic events can stimulate local economies if organized at regular intervals (Brewer and Freeman 2015). Extensive visitor surveys are needed to estimate the dollar expenditures and categories. Assumptions were made due to the lack of survey.
- 89.2% of employees live in Tippecanoe County, 7.3% in the rest of Indiana, and 3.5% lived outside of Indiana.

Data Collection and Model Details 2

- 1) REMI Policy Insight + v. 3.2.1 is used. It is a 3-region model: Tippecanoe County, rest of Indiana, and rest of USA.
- 2) Identifying the **appropriate geography** is the key. For example, **Purdue Extension** office is in every county and services include technical assistance in agriculture, and connecting to main campus resources such as Local Technical Assistance Program for civil engineering. **Manufacturing Extension Partnership** has several offices in the state and provide statewide services to support industries.
- 3) The focus was also identifying specific categories of spending where **induced investments from expenditures are nullified**, such as operations and maintenance, salaries, etc.
- 4) **R&D investments** are not nullified because the research induces new ventures in Purdue Research Park and new collaboration with industries creating new business establishments and jobs in Indiana.
- 5) The department-level information on **alumni occupations and job locations** could not be included in the model because of incomplete information. The objective is to include this information in the next iteration.
- 6) Graduates from **engineering, pharmacy, management, and veterinary science** schools earn much higher than graduates from arts and letters.

Results

2024 CONTRIBUTIONS

\$6.5

BILLION

to county, state, and U.S. GDP

\$3B+\$1B

county's GDP + state's GDP



\$2.45B

nation's GDP

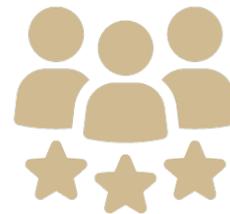


GENERATED

28,900

JOBS IN INDIANA

+19,000 jobs at Purdue WL



13,000

new state residents



+2.5%

labor force participation
in Tippecanoe County

Results 1: Economic indicators (Differences)

Category	Units	Tippecanoe 2024	Rest of Indiana 2024	Total Indiana 2024
Total Employment	Thousands (Jobs)	39.07	8.88	47.95
Residence Adjusted Employment	Thousands	32.57	15.02	47.59

Category	Units	Tippecanoe 2024	Rest of Indiana 2024	Total Indiana 2024
Gross Regional Product	Billions of Fixed (2024) Dollars	3.02	1.02	4.04
Output	Billions of Fixed (2024) Dollars	4.91	1.75	6.66
Value-Added	Billions of Fixed (2024) Dollars	3.02	1.02	4.04
Personal Income	Billions of Fixed (2024) Dollars	1.40	0.93	2.33
Disposable Personal Income	Billions of Fixed (2024) Dollars	1.22	0.81	2.04

Source: REMI simulations run by PCRD

Results 2: GDP and PCI (Differences)

Table 2: Gross Regional/Domestic Product (Differences) 2024

Region	Units	2024
Tippecanoe County, IN	Billions of Fixed (2024) Dollars	3.02
Rest of Indiana	Billions of Fixed (2024) Dollars	1.02
Rest of U.S.	Billions of Fixed (2024) Dollars	2.45
Total	Billions of Fixed (2024) Dollars	6.49

Source: REMI simulations run by PCR D

Table 3: Disposable Personal Income Per Capita (Differences) 2024

Category	Units	Tippecanoe 2024
Real Disposable Personal Income	Billions of Fixed (2024) Dollars	1.22
Real Disposable Personal Income per Capita	Thousands of Fixed (2024) Dollars	4.08

Source: REMI simulations run by PCR D

Results 3: Demographic indicators (Differences)

Table 4: Labor Force Components (Differences) 2024

Category	Units	Tippecanoe 2024
Labor Participation Rate	Rate	0.025
Labor Force	Thousands	8.12

Source: REMI simulations run by PCRD

Table 5: Population (Differences) 2024

Region	Units	Year 2024
Tippecanoe County, IN	Thousands	8.6
Rest of Indiana	Thousands	4.2
Total Indiana	Thousands	12.8

Source: REMI simulations run by PCRD

Discussions and Next Steps

- 1) **Economic contributions and impacts** are not limited to only Tippecanoe County, but **spillover** to the rest of Indiana and the rest of USA.
- 2) There are **positive demographic contributions** and impacts in terms of **economic migrants and movers** increasing and retaining the population as well as increase in the **labor force participation rate**.
- 3) \$3.19 B of expenditures in select categories created \$6.5 B of total **changes in GDP** including Tippecanoe County, rest of Indiana, and the rest of USA.
- 4) There is a significant contribution to the **real disposable personal income** and the **real disposable personal per capita income** increases by almost \$4K in Tippecanoe County in 2024.
- 5) Prepare guidelines for data collection for future iterations of the economic contributions and impacts study.
- 6) Experiment with incorporating stochastic methods for data collection.

Report and Acknowledgement



<https://pcrd.purdue.edu/purdue-economic-impact>

Report Author

Indraneel Kumar, Ph.D.

Reviewers

Roberto Gallardo, PhD

Alejandro Madrigal (REMI)

Chris Judson (REMI)

Peter Evangelakis, PhD (REMI)

Team Members

Office of Engagement

Roberto Gallardo, PhD

Purdue Center for Regional Development (PCRD)

Indraneel Kumar, PhD

Ben St. Germain

Institutional Data Analytics + Assessment (IDA+A)

Laura Beth Todd

Andrea Pluckebaum

Michael S. Wakolbinger

University of Georgia (Michael Adjemian, Ph.D.) and University of Connecticut (Fred Carstensen, Ph.D., Peter Gunther, and Theophilus Djaba, Ph.D.) faculty members for interviews and insights.

Contact Us



1341 Northwestern Avenue
Purdue Schowe House
West Lafayette, IN 47906



765-494-7273



pcrd@purdue.edu

Purdue Center for Regional Development

seeks to pioneer new ideas and strategies that contribute to regional collaboration, innovation and prosperity.

www.pcrd.purdue.edu

Schowe House photography is by PCRD staff.





- Purpose-built for university footprint studies, economic development projects and investments.
- Interactive modeling with AI-supported interpretation and narrative development
- Separates construction and operational phases, captures capital, equipment, sales, employment and supply chain effects
- Enables clear, fast communication of results to decision-makers

Thank you for attending!

For more information, please contact:

Dr. Indraneel Kumar: ikumar@purdue.edu

Shreeya Gurav: Shreeya.Gurav@remi.com

Peter Treyz: Peter.Treyz@remi.com