

Anticipating Labor Market Needs: Projecting Occupations in a Changing Economy

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W.E. Upjohn Institute for Employment Research

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- Research
- Workforce Service Center
- *Upjohn Regional*: Regional Economic and Community Development
 - Regional analysis
 - Economic and workforce development strategies
 - Economic impact studies
 - Regional planning
 - Community outreach



Method Overview

What does the method estimate?

- The projected number of workers in a particular occupation at a particular point in time for a particular region
- Accounts for local trends
- Geographies can be as large as multi-state regions or as small as individual counties
- Ways to augment the estimates
 - Match occupations with earnings
 - Match occupations with education requirements
 - Match occupations with annual job openings
 - Match location with commuting data to identify supply of workers



Two Kinds of Uses

- Understand the current trajectory of occupational demand
- Customize the model to simulate hypothetical scenarios
 - If a new major business arrives
 - New initiative
 - Major changes to an industry (or industries) in a particular region
 - Technological advancements





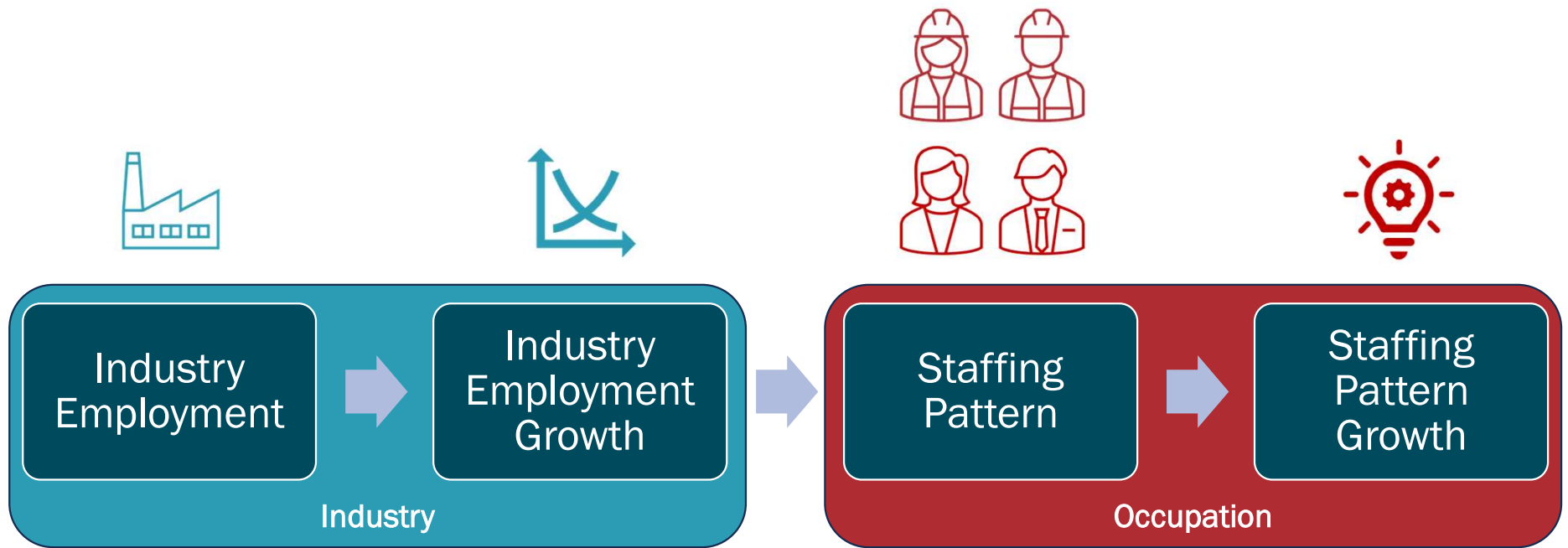
Examples of Uses

- Skilled Trades Expansion at Community College
 - Kalamazoo Valley Community College planned to expand and upgrade their skilled trades wing
 - Method was used to show the projected need for certain occupations that the community college could prepare students for
 - Results were used in fundraising materials for the expansion

Examples of Uses

- SHAPE Engine
 - Innovative collaboration between Michigan State University and The Ohio State University
 - Develop sustainable packaging materials to then commercialize it
 - Method was used to indicate the impact on occupational needs that the commercialized innovations would have
 - Results were used to show job creation, quality of job creation, and workforce training needs

Process





Who Should Use This Method?

- Community Colleges & Workforce Development Agencies
 - Identify the need for various future jobs to appropriately allocate resources for training and support
- Local Governments & RDOs
 - Understand the changing landscape of the local economy
- Other Stakeholders in Major Initiatives
 - Our projections can show the impact of certain initiatives which can help indicate whether or not the costs of investment are worth the benefits





Data



Public

- Real data
- Bureau of Labor Statistics
- Suppressions
- Projected data available at national level

Proprietary

- Estimates
- Various Providers
- Little to no suppression
- Data available for more specific industry, occupations, and smaller geographies
- Projected data available at subnational levels





Caveats

- Proprietary data are estimates
- Projected data carryout currently existing trends
- Gaps in the data do exist
- *Knowing your region, the question at hand, and having a good knowledge of the data are important for addressing these issues*



Application

Going About The Projection Calculation

Wayne County, MI
Motor Vehicle Manufacturing

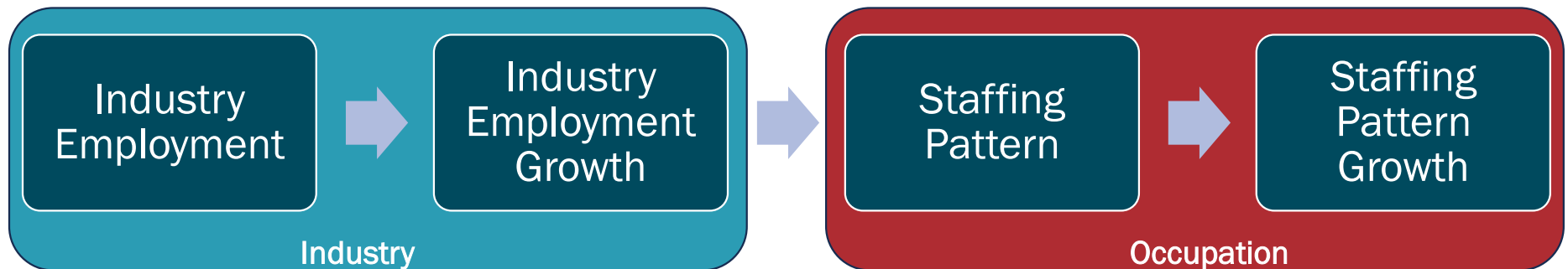
2024:

25,938

Staffing Pattern for Industrial
Engineers in MI

2024:

2.4%



Going About The Projection Calculation

Wayne County, MI
Motor Vehicle Manufacturing

2024:

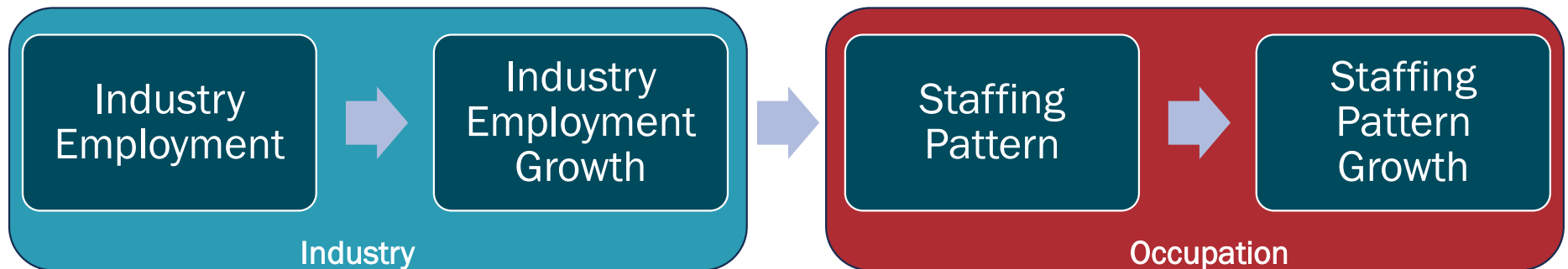
25,938

Staffing Pattern for Industrial
Engineers in MI

2024:

2.4%

623



Going About The Projection Calculation

Wayne County, MI
Motor Vehicle Manufacturing

2024:

25,938

2030:

31,323

Staffing Pattern for Industrial
Engineers in MI

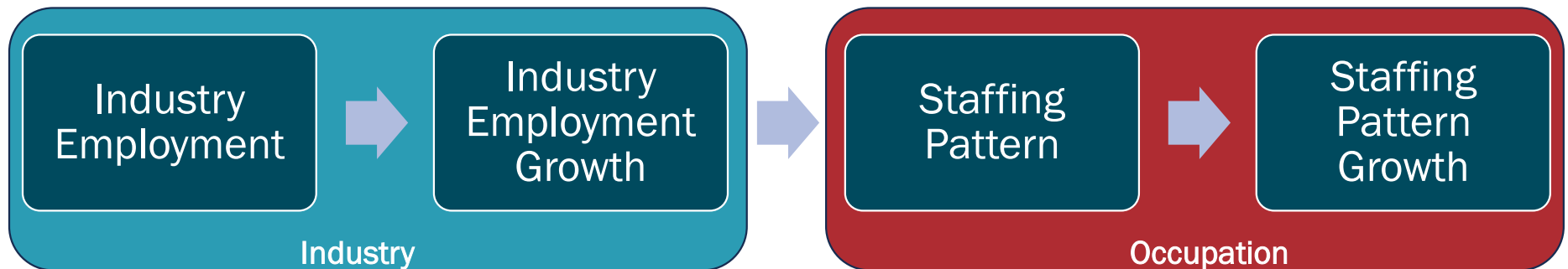
2024:

2.4%

2030:

2.5%

623



Going About The Projection Calculation

Wayne County, MI
Motor Vehicle Manufacturing

2024:

25,938

2030:

31,323

Staffing Pattern for Industrial
Engineers in MI

2024:

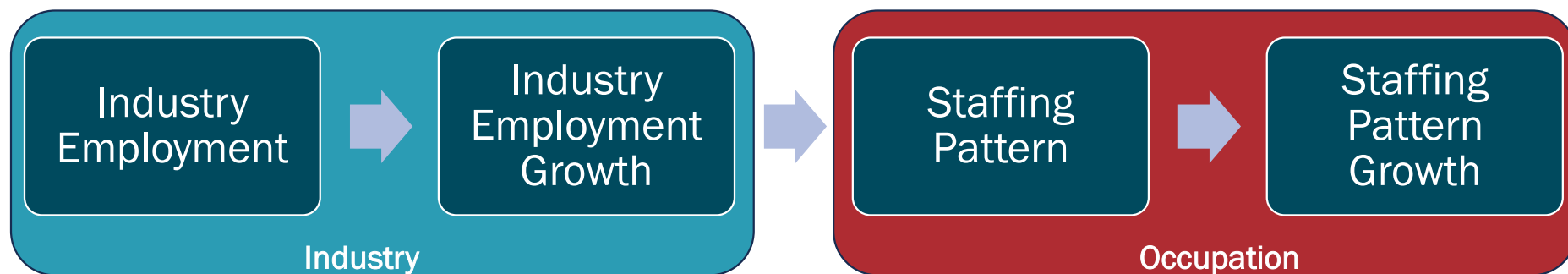
2.4%

2030:

2.5%

623

783



Customization for Hypothetical Scenarios

Wayne County, MI
Motor Vehicle Manufacturing

2024:

25,938

2030:

31,323

Staffing Pattern for Industrial
Engineers in MI

2024:

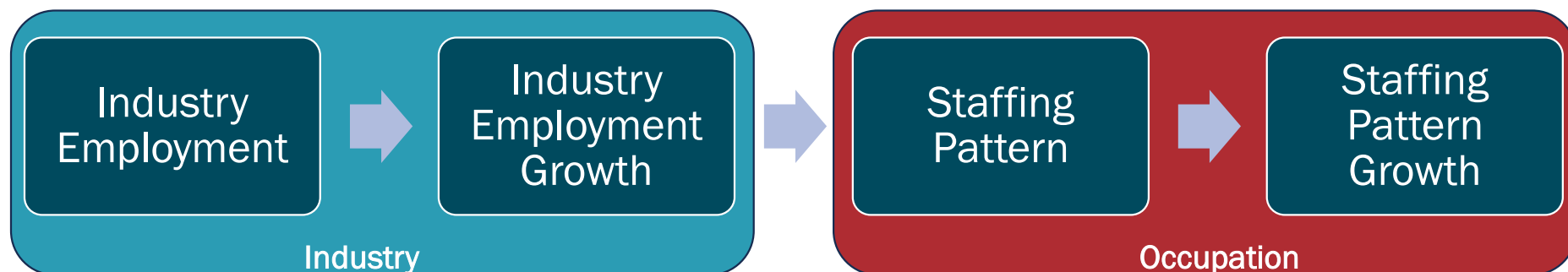
2.4%

623

2030:

2.5%

783



Customization for Hypothetical Scenarios

Wayne County, MI
Motor Vehicle Manufacturing

2024:

25,938

2030:

32,232

Staffing Pattern for Industrial
Engineers in MI

2024:

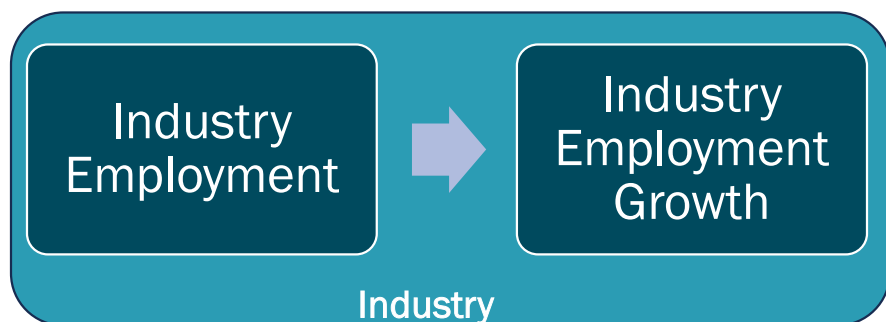
2.4%

623

2030:

2.9%

935



Example of Results Table from Past Project

SOC code	SOC title	Projected employment		Expected annual job openings
		2023	2032	
17-3011	Architectural and Civil Drafters	39	39	4
17-3012	Electrical and Electronics Drafters	12	12	1
17-3013	Mechanical Drafters	62	58	6
17-3019	Drafters, All Other	8	8	1
17-3021	Aerospace Engineering and Operations Technicians	2	2	0
17-3023	Electrical and Electronics Engineering Technicians	72	70	7
17-3024	Electro-Mechanical Technicians	10	10	1
17-3026	Industrial Engineering Technicians	197	199	21
17-3027	Mechanical Engineering Technicians	186	191	19
17-3028	Calibration Technologists and Technicians	5	5	0

Example of Results Table from Past Project

SOC code	SOC title	Average annual salary (\$)	10th percentile annual salary (\$)	25th percentile annual salary (\$)	Median annual salary (\$)	75th percentile annual salary (\$)	90th percentile annual salary (\$)
17-3011	Architectural and Civil Drafters	60,600	36,780	38,970	52,260	71,580	98,690
17-3012	Electrical and Electronics Drafters	71,570	47,840	50,960	63,720	85,860	105,310
17-3013	Mechanical Drafters	62,490	40,450	48,470	57,990	73,490	94,470
17-3019	Drafters, All Other	56,300	38,720	41,230	54,160	65,600	78,500
17-3021	Aerospace Engineering and Operations Technicians	60,300	39,100	42,260	61,960	75,970	82,270
17-3023	Electrical and Electronics Engineering Technicians	66,130	39,480	48,270	62,790	79,160	96,120
17-3024	Electro-Mechanical Technicians	60,960	39,520	47,620	60,570	65,050	76,990
17-3026	Industrial Engineering Technicians	58,930	47,420	47,760	57,200	61,470	77,180
17-3027	Mechanical Engineering Technicians	52,130	30,000	36,550	47,760	62,030	77,330
17-3028	Calibration Technologists and Technicians	59,520	33,490	49,930	58,240	64,170	80,970

Thank you

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