EVALUATING THE EFFECT OF MINIMUM WAGE POLICY ON YOUTH UNEMPLOYMENT IN OECD COUNTRIES (2000–2020)

Assignment Type:

Dissertation Chapter / Policy Evaluation Paper

Tools Used:

R (plm package), OECD.Stat, World Bank Development Indicators

Abstract:

This study investigates the causal relationship between minimum wage changes and youth unemployment rates in 25 OECD countries over two decades. Using fixed-effects panel regression and lag structure models, it examines whether increasing minimum wages leads to short-term employment displacement among young workers (aged 15–24). The study further categorizes the countries by GDP per capita to test for differential effects between high- and mid-income OECD economies.

1. Research Objective

- Assess the impact of national minimum wage hikes on youth unemployment
- Determine whether the effect differs across income levels of countries
- Provide empirical insights into ongoing minimum wage debates in developed economies

2. Hypotheses

- **H0**: Minimum wage changes have no effect on youth unemployment
- **H1**: Minimum wage increases lead to higher youth unemployment in the short run

3. Data Summary

Variable	Source	Frequency	Notes
Minimum Wage (monthly, PPP-adjusted)	OECD.Stat	Annual	In constant international \$

Youth Unemployment Rate	World Bank	Annual	% of labor force aged 15–24
GDP per Capita	OECD.Stat	Annual	Used for subgroup analysis
Labor Force Participation	ILO	Annual	Control variable

4. Methodology

- **Panel Regression (Fixed Effects)**: Captures within-country variation
- **Lag Variables**: To capture delayed employment effects
- **Subgroup Analysis**: High-income vs mid-income OECD
- **Model Specification**:

$$YouthUnemp_{it} = \alpha + \beta 1 \cdot MinWageit - 1 + \beta 2 \cdot LFPRit + \mu_i + \lambda_t + \varepsilon it$$

- **Assumptions Tested**:
  - Multicollinearity (VIF < 2)
  - Time fixed effects included to capture global shocks (e.g., 2008 recession)

5. Results Summary Table (R Output Interpreted)

Variable	**Coefficient**	**Std. Error**	**p-value**	**Interpretation**
Lagged Min Wage	+0.28	0.09	0.003	A 10% increase in min wage raises youth unemp by 2.8% in the short term
LFPR	-0.12	0.05	0.010	Higher participation lowers unemployment
Time Fixed Effects	Included			Captures global economic crises

6. Subgroup Analysis

- **High-income countries**: Positive but smaller effect (0.18, not significant)
- **Mid-income countries**: Stronger, significant effect (0.35, $p < 0.01$)

7. Visuals Provided

- Line graph: Youth unemployment trend vs minimum wage in 5 countries
- Coefficient plot with 95% CI (R ggplot2)
- Heat map showing countries with highest youth unemployment post wage hikes

8. Interpretation

- The findings support concerns that **aggressive minimum wage increases may temporarily displace youth workers**, particularly in economies with weak labor demand.
- However, in high-income countries with stronger safety nets, the effect is muted or neutralized over time.

9. Policy Recommendations

- **Gradual Wage Adjustments** with indexation to productivity
- **Differentiated Minimum Wages** for entry-level or part-time youth employment
- **Subsidized Apprenticeships** to reduce displacement effects

10. Deliverables Provided

- Full 5000-word dissertation-style write-up (Literature Review, Methodology, Results, Policy Discussion)
- Cleaned dataset and R script (.Rmd and .R)
- 10 academic references from JSTOR, NBER, World Bank
- Visuals (in PDF and PNG) for direct use in reports or presentations