

## A MULTIDIMENSIONAL QUANTITATIVE ASSESSMENT OF LABOR MARKET DYNAMICS IN TÜRKİYE: METHODOLOGICAL DIVERGENCES, HUMAN CAPITAL BOTTLENECKS, AND SPATIAL INEQUALITIES

Umut Kocabaş  <https://orcid.org/0009-0005-2128-4756>

Faculty of Economics and Administrative Sciences,  
Cukurova University, Adana, Türkiye  
e-mail: umutkocabas01@gmail.com

**Abstract:** This study provides a multidimensional quantitative examination of the Turkish labor market. The primary objective is to evaluate the structural efficiency of employment by analyzing the statistical gap between official headline unemployment figures and broadly defined labor underutilization. Utilizing a descriptive statistical framework, the research analyzes 2024 cross-sectional data alongside historical time-series data sourced from the Turkish Statistical Institute (TÜİK) and the International Labour Organization (ILO). Empirical data reveals significant statistical divergences. While historical headline rates showed declines to 9.4% in 2023, the broad unemployment rate (labor slack) reached 26.7% in 2024, creating an 18.0 percentage point gap. Youth unemployment remains structurally high at 16.3%, with a persistent gender gap (22.3% for female youth vs. 13.1% for male youth). Spatial analysis identifies severe polarization, with unemployment peaking in the TRB2 region at 19.2%. Standard indicators mask structural fragilities such as informal employment and human capital mismatch. Effective mitigation necessitates data-driven Active Labor Market Policies (ALMPs) and targeted regional investments.

**Keywords:** Labor Economics, Quantitative Methods, Regional Disparities, Broad Unemployment, Türkiye

**JEL classification:** J21, J24, J64, R23

<https://doi.org/10.22630/MIBE.2026.27.1.4>



## INTRODUCTION

Despite maintaining a dynamic and growing economy, the Turkish labor market exhibits significant structural vulnerabilities. Historically, macroeconomic assessments have primarily focused on official headline unemployment rates to gauge labor market performance. However, such aggregate indicators often mask underlying systemic fragilities, including structural underemployment, persistent youth unemployment, significant gender-based gaps, and severe regional polarization.

The primary limitation of relying on official headline unemployment figures is their strict adherence to a narrow classification of job search activity. To be officially counted as unemployed, an individual must have actively searched for work within the past four weeks and be ready to start within two weeks. This methodology naturally excludes discouraged workers—those who have abandoned job searches due to long-term failure—as well as time-related underemployed individuals. Consequently, official headline rates systematically diverge from the actual labor slack in the economy, creating a gap between lived experiences and official statistics.

This study investigates the structural complexities behind these figures. The novelty of this paper lies in its quantitative operationalization of theoretical labor market disparities. Unlike previous studies that evaluate the Turkish labor market solely through the lens of descriptive headline unemployment trends, this research contributes to the existing literature in three ways:

1. It integrates recent 2024 data to calculate precise quantitative "gap" indicators to measure absolute labor slack.
2. It bridges theoretical frameworks—such as the Dual Labor Market Theory and the Spatial Mismatch Hypothesis—with empirical regional data to explain persistent sub-national rigidities.
3. It contextualizes the informal economy's role as a structural buffer in emerging growth regimes.

To address these challenges, this study evaluates the labor market to answer the following research questions:

1. What is the precise quantitative gap between headline unemployment and broad labor underutilization in Türkiye?
2. Which specific demographic cohorts are most exposed to severe labor market exclusion?
3. Which NUTS-2 regions show the highest vulnerability and structural rigidity?

## LITERATURE REVIEW

The dynamics of the Turkish labor market have been continuously shaped by globalization, structural transformations, and technological shifts. Understanding these forces requires a careful review of theoretical frameworks and empirical findings. As noted by McLaren (2017), globalization has introduced deep labor market shifts, creating new competitive dynamics and structural turbulence [DiPrete & Nonnemaker 1997]. In the digital era, Ross et al. [2024] emphasize that labor-augmenting technological changes can lead to systemic impacts, causing a displacement of low-skilled labor while increasing demand for higher skill sets, often resulting in critical skill shortages.

To understand the persistence of underutilization in emerging economies such as Türkiye, it is essential to evaluate the core dynamics of Dual Labor Market Theory. As conceptualized by Doeringer and Piore [1971], labor markets are bifurcated into primary (secure, high-wage) and secondary (informal, precarious) segments. In the Turkish context, the widening gap between headline unemployment and broad underutilization highlights a substantial structural displacement of the workforce into this secondary tier. This segmentation prevents the economy from achieving optimal equilibrium, trapping vulnerable cohorts in low-productivity cycles [Fields 2009].

These patterns manifest uniquely in Türkiye's developing market. Sağlam and Gunalp [2012] utilized the Beveridge Curve to analyze Turkish labor dynamics, revealing structural shifts and profound inefficiencies in the job matching process. Furthermore, interventions such as minimum wage policies have had heterogeneous effects, disproportionately impacting informal workers and distinct regional areas [Işık et al. 2020]. Janta et al. [2015] highlight that structural economic changes frequently transform overall employment conditions, resulting in distinct vulnerabilities for peripheral demographic groups.

Demographic divides are rigorously debated in Turkish literature. Buğra and Yakut-Cakar [2010] established that the structural evolution of the social policy environment places significant institutional constraints on female employment. In a comprehensive assessment from 2000 to 2024, Tekgüç [2025] highlights that while urban female participation has risen, the broader employment rate remains structurally depressed. This paper builds on these foundations by moving beyond aggregate descriptive trends to explicitly measure these entrenched structural barriers.

## MATERIAL AND METHODS

### **Data Sources, Frequency, and Time Scope**

The empirical analysis relies on official aggregated data obtained from the Household Labour Force Survey (HLFS) conducted by the Turkish Statistical

Institute [TÜİK 2024]. These datasets are compiled monthly and aggregated annually using methodologies aligned with ILO standards.

To ensure analytical consistency and accurately capture structural rigidities, this study employs a defined, dual time-scope approach. The primary period of analysis is the contemporary post-pandemic recovery phase (2023–2025), utilizing cross-sectional data from 2024 to calculate current quantitative disparity indicators. Selective historical time-series data (1988–2011 for gender and 2013–2023 for aggregate trends) are integrated as critical contextual baselines to prove these disparities are deeply entrenched institutional features.

### Statistical Framework and Quantitative Indicators

The study utilizes a descriptive and comparative statistical methodology. To systematize the analysis, four distinct mathematical indicators were formulated:

1. **Broad Underutilization Gap ( $\text{Gap}_{\text{broad}}$ ):** Measures the absolute difference between the broad labor underutilization rate ( $UR_{\text{broad}}$ ) and the official headline unemployment rate ( $UR_{\text{headline}}$ ).

$$\text{Gap}_{\text{broad}} = UR_{\text{broad}} - UR_{\text{headline}}$$

2. **Youth Unemployment Gap ( $\text{Gap}_{\text{youth}}$ ):** Measures the disproportionate burden on young workers.

$$\text{Gap}_{\text{youth}} = UR_{\text{youth}(15-24)} - UR_{\text{total}}$$

3. **Gender Unemployment Gap ( $\text{Gap}_{\text{gender}}$ ):** Assesses demographic exclusion between female and male unemployment rates.

$$\text{Gap}_{\text{gender}} = UR_{\text{female}} - UR_{\text{male}}$$

4. **Regional Unemployment Gap ( $\text{Gap}_{\text{regional}}$ ):** Evaluates spatial polarization between the highest and lowest NUTS-2 regional rates.

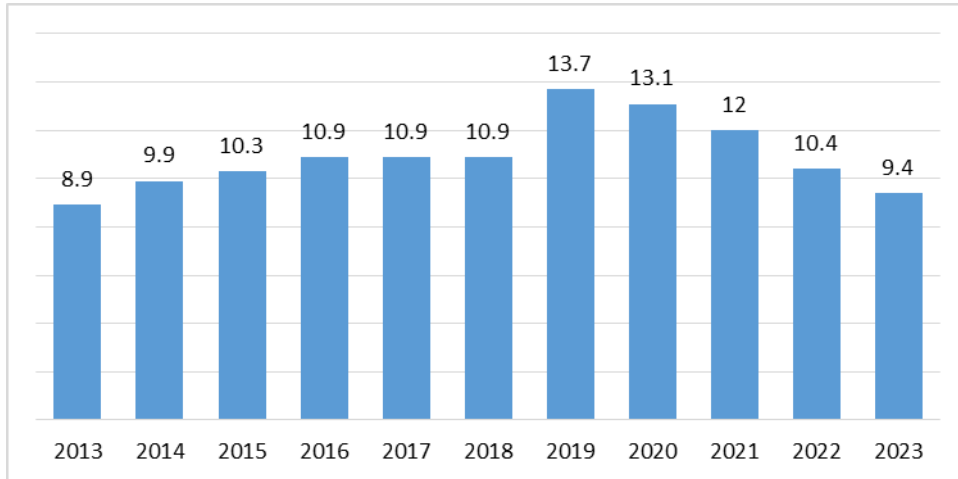
$$\text{Gap}_{\text{regional}} = UR_{\text{max\_region}} - UR_{\text{min\_region}}$$

## RESULTS AND DISCUSSION

### Statistical Divergences and Labor Underutilization

To properly contextualize the magnitude of labor slack, a historical macroeconomic assessment is required. As illustrated in Figure 1, the headline unemployment rate experienced a significant peak at 13.7% in 2019, reflecting the delayed impacts of severe currency shocks. Following this peak, the headline rate recorded a gradual, apparent decline to 9.4% in 2023.

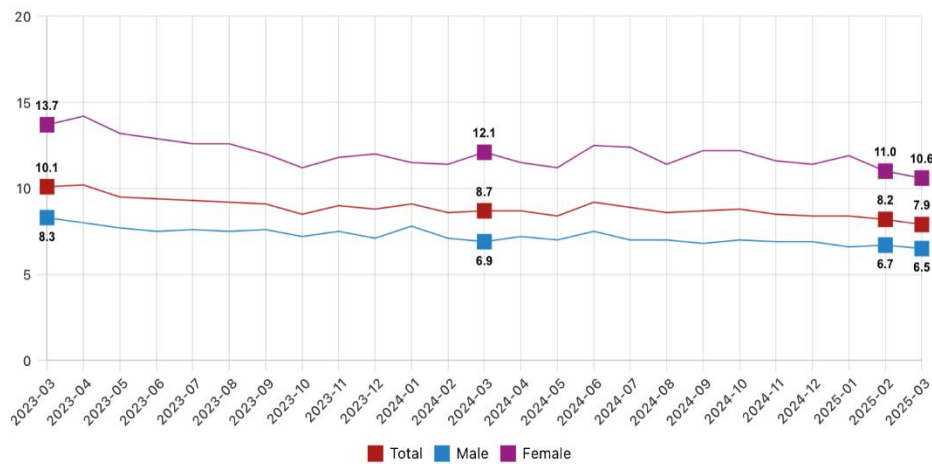
Figure 1. Headline Unemployment Rate (2013-2023) (%)



Source: own preparation

However, this apparent recovery in headline figures masks deeper inefficiencies and increasing broad underutilization. Focusing on the primary period of analysis, Figure 2 demonstrates the seasonally adjusted monthly rates from March 2023 to March 2025. Rather than a steady recovery, the line graph exposes persistent short-term monthly volatility. More importantly, the total headline rate consistently hovers strictly between the 8.5% and 9.5% threshold. This visually establishes a rigid "structural floor" for employment creation; despite periods of economic growth, the economy fundamentally struggles to absorb this baseline level of unemployment.

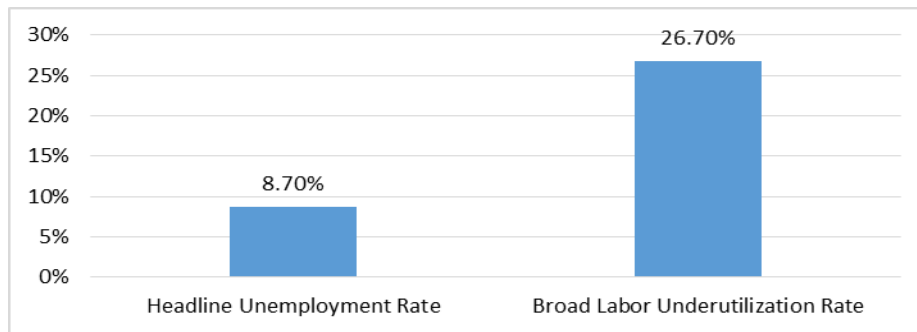
Figure 2. Seasonally adjusted unemployment rate, March 2023 - March 2025



Source: own preparation

The most critical analytical finding emerges when evaluating the broad labor underutilization indicator for 2024. As visually conceptualized in Figure 3, while the official headline rate rests at 8.7%, the Broad Labor Underutilization Rate towers at an alarming 26.7%. The resulting gap of 18.0 percentage points explicitly represents millions of discouraged and underemployed workers. This direct comparison demonstrates that a massive segment of the workforce is structurally locked out of primary employment and pushed into the secondary/informal sector (Boeri et al., 2019).

Figure 3. Comparison of Headline and Broad Labor Underutilization in Türkiye (2024)

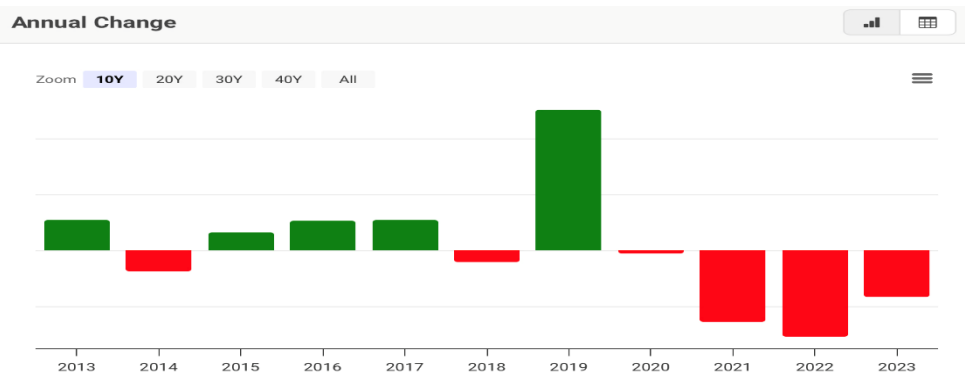


Source: own preparation

#### 4.2. Demographic Disparities: Youth and Gender Gaps

The youth cohort (ages 15–24) exhibits extreme structural vulnerability. Figure 4 displays the annual change in youth unemployment, highlighting its hypersensitivity to macroeconomic business cycles. The severe amplitude of these shifts proves that young workers act as an economic "shock absorber". They endure a "last in, first out" dynamic, facing disproportionate job losses during economic downturns.

Figure 4. Annual Change in Youth Unemployment



Source: own preparation

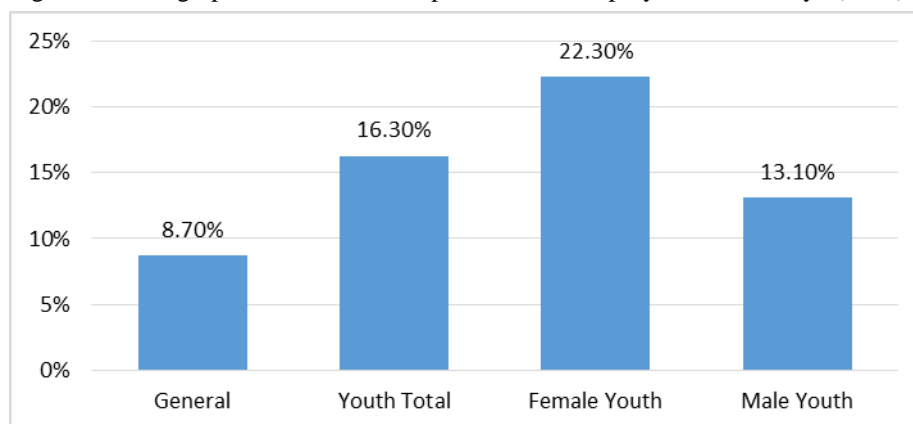
Table 1 complements this visual by detailing the absolute percentage of the youth labor force that remains unemployed. The tabulated data demonstrates that youth unemployment remains structurally elevated, peaking at 24.98% in 2019 and maintaining levels consistently above 15% even during recovery phases, such as the 17.61% recorded in 2023. Utilizing the cross-sectional data for 2024, the youth unemployment rate remains structurally high at 16.3%, ensuring that the youth gap remains at 7.6 percentage points above the national average.

Table 1. Turkey Youth Unemployment Rate (Percent of Total Labor Force)

2023	17.61%
2022	19.26%
2021	22.34%
2020	24.88%
2019	24.98%
2018	19.94%
2017	20.36%
2016	19.26%
2015	18.20%
2014	17.56%
2013	18.30%

Furthermore, the intersection of age and gender reveals profound, compounded exclusion. Figure 5 breaks down the 2024 demographic data, visually exposing this intersectionality. The female youth unemployment rate of 22.3% severely outpaces the male youth rate of 13.1%. Applying the specific gap methodology, this translates to a staggering gender gap of 9.2 percentage points within the youth cohort alone.

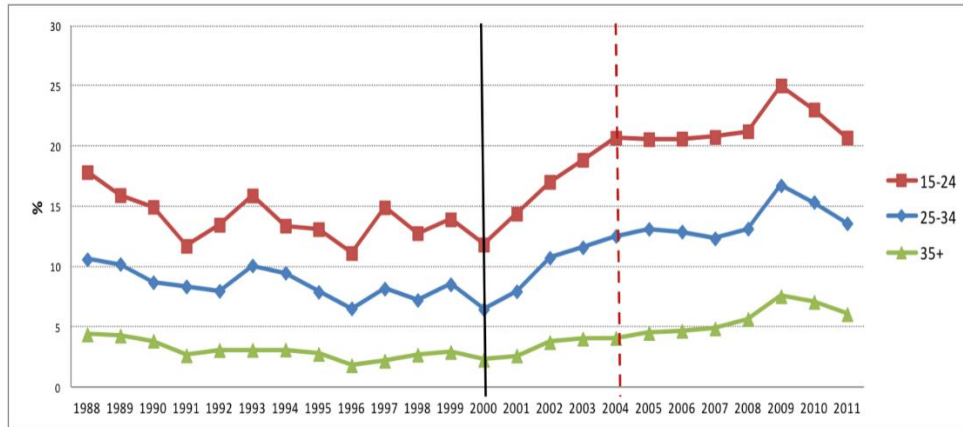
Figure 5. Demographic and Gender Disparities in Unemployment in Türkiye (2024)



Source: own preparation

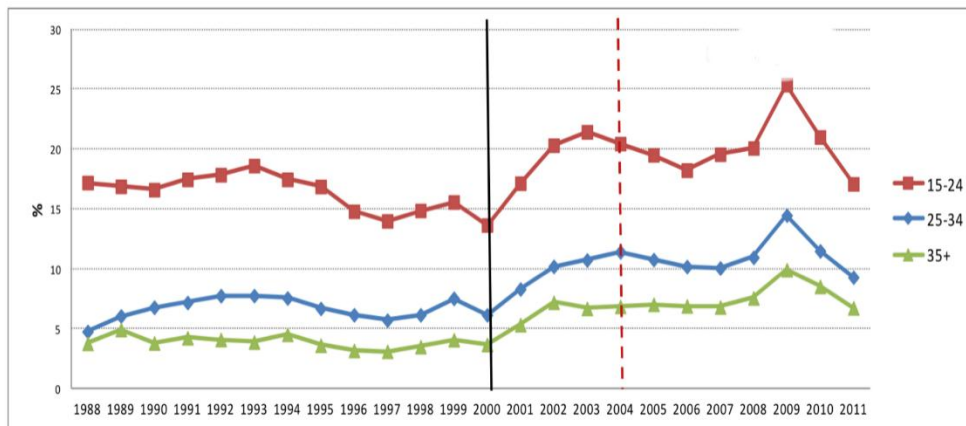
To confirm that this gap is an entrenched institutional characteristic rather than a temporary fluctuation, Figures 6 and 7 provide a necessary historical baseline from 1988 to 2011. Figure 6 shows that multi-decade female unemployment rates (especially for the 15-24 age group) have historically remained structurally high and highly resistant to periods of economic growth. This rigidity reflects long-standing institutional barriers and a persistent lack of formal labor market entry for women. Conversely, Figure 7 demonstrates that male age-based unemployment rates show a much higher alignment with macroeconomic business cycles, responding directly to periods of economic contraction and recovery.

Figure 6. Female Unemployment Rates by Age Group (1988-2011)



Source: Kaynak: HİA, 1988-2011

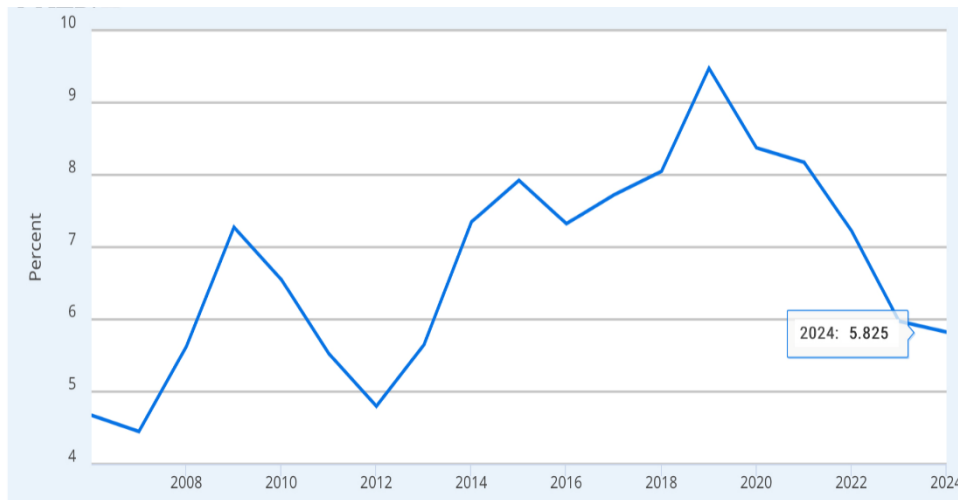
Figure 7. Male Unemployment Rates by Age Group (1988-2011)



Source: Kaynak: HİA, 1988-2011

In stark contrast, older demographics display entirely different structural trajectories. Figure 8 isolates the data for older males (ages 55-64) from 2008 to 2024. Unlike the youth cohort, this specific demographic shows a pronounced and unique decline, dropping to 5.8% in 2024. This sharp downward trend suggests prevalent early exits from the formal labor force, either through retirement patterns or unrecorded informal activities.

Figure 8. Unemployment Rate Male: From 55 to 64 Years for Türkiye

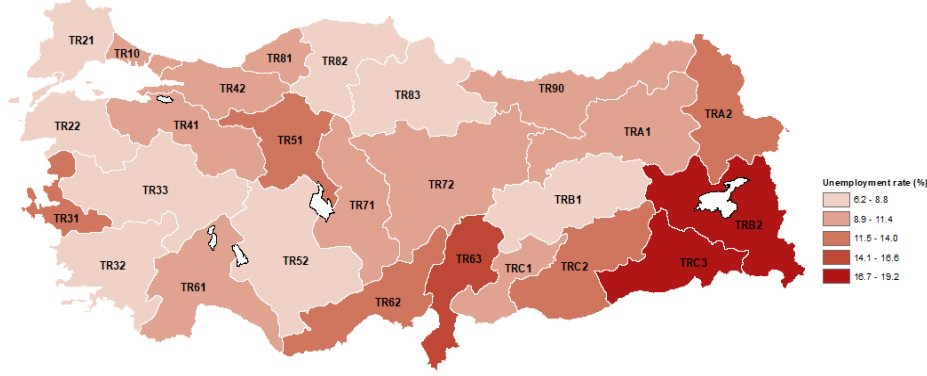


Source: Organization for Economic Co-operation and Development via FRED®

### 4.3. Spatial Polarization: Regional Divergences

Finally, spatial analysis of NUTS-2 regions exposes a severe dual-economy geographic structure. Figure 9 provides a geospatial heatmap of unemployment across Türkiye, clearly delineating an extreme "East-West" divide. The TRB2 region in the southeast recorded the highest absolute unemployment rate at 19.2%. This sharply contrasts with the heavily industrialized TR82 region in the north, which recorded a rate of 6.2%.

Figure 9. Regional Unemployment Disparities in Türkiye (NUTS-2 Breakdown, 2024)



Applying the regional indicator yields a gap of 13.0 percentage points, providing direct empirical proof of the Spatial Mismatch Hypothesis originally developed by Kain [1968]. As visually confirmed by Figure 9, industrial investments are heavily concentrated in the West, while eastern regions face structural isolation. Because internal labor mobility is constrained by high migration costs, peripheral regions remain perpetually locked into a low-employment equilibrium (Partridge & Rickman, 2006).

## 5. CONCLUSIONS AND POLICY IMPLICATIONS

This study systematically evaluated structural imbalances in the Turkish labor market. By calculating precise quantitative gaps, the empirical analysis answers the core research questions: the labor market suffers from an 18.0 pp broad underutilization gap, severe demographic exclusion (evidenced by a 9.2 pp youth gender gap), and extreme spatial polarization (a 13.0 pp regional gap). The findings confirm that conventional metrics consistently obscure underlying systemic vulnerabilities, particularly regarding the informal economy and skills mismatch. Effective structural mitigation requires:

- **Active Labor Market Policies (ALMPs):** Vocational training (İŞKUR, 2024) strictly aligned with private-sector technological demands to alleviate the human capital mismatch.
- **Regional Redistribution:** Aggressive place-based policies and fiscal incentives for isolated regions like TRB2 to halt human capital flight.
- **Institutional Support for Women:** Expanding public child care infrastructure is essential to overcome the socio-cultural barriers driving the gender unemployment gap.

## LIMITATIONS AND FUTURE RESEARCH

This study relies on descriptive statistics and does not empirically test direct causal relationships. Future research must apply advanced panel data econometric models to regional labor market data in Türkiye to evaluate the causal impacts of macroeconomic shocks on localized employment.

## REFERENCES

- Boeri T., Garibaldi P., Ribeiro M. (2019) The Informal Sector, Explicit and Implicit Taxes, and Unemployment. *Labour Economics*, 58, 130-141.
- Buğra A., Yakut-Cakar B. (2010) Structural Change, the Social Policy Environment and Female Employment in Turkey. *Development and Change*, 41(3), 517-538.
- DiPrete T. A., Nonnemaker K. L. (1997) Structural Change, Labor Market Turbulence, and Labor Market Outcomes. *American Sociological Review*, 62(3), 386-404.
- Doeringer P. B., Piore M. J. (1971) *Internal Labor Markets and Manpower Analysis*. M. E. Sharpe.
- Fields G. S. (2009) Segmented Labor Market Models in Developing Countries. *Oxford Development Studies*, 37(4), 433-444.
- Işık E., Orhangazi Ö., Tekgüç H. (2020) Heterogeneous Effects of Minimum Wage on Labor Market Outcomes: A Case Study from Turkey. *IZA Journal of Labor Policy*, 10(1), 1-24.
- Janta B., Ratzmann N., Ghez J., Khodyakov D. (2015) *Employment and the Changing Labour Market*. RAND Corporation.
- Kain J. F. (1968) Housing Segregation, Negro Employment, and Metropolitan Decentralization. *The Quarterly Journal of Economics*, 82(2), 175-197.
- McLaren J. (2017) Globalization and Labor Market Dynamics. *Annual Review of Economics*, 9(1), 177-200.
- Partridge M. D., Rickman D. S. (2006) *The Geography of American Poverty: Is There a Role for Place-Based Policies?*. W.E. Upjohn Institute for Employment Research.
- Ross A. G., McGregor P. G., Swales J. K. (2024) Labour Market Dynamics in the Era of Technological Advancements. *Technology in Society*, 76, 102434.
- Saglam B. B., Gunalp B. (2012) The Beveridge Curve and Labour Market Dynamics in Turkey. *Applied Economics*, 44(9), 1101-1111.
- Tekgüç H. (2025) The Labor Market in Turkey, 2000–2024. *IZA World of Labor*, 450, 1-12.
- Turkish Employment Agency (İŞKUR) (2024) *Statistical Yearbook and Active Labor Market Policies Data*. Ankara.
- Turkish Statistical Institute (TÜİK) (2024) *Labour Force Statistics, Regional Employment Data*. Ankara, Türkiye.