

Leading Sectors, Structural Transformation, and Labor Absorption in Regional Economies

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ABSTRACT

Purpose – This study examines sectoral advantages, structural transformation, and the capacity of leading economic sectors to generate employment. It focuses on the mismatch between sectoral economic performance and labor absorption in regional development.

Design/methodology/approach - This study employs a comparative quantitative-descriptive approach using constant-price GRDP and employment data for 2020–2024. Location Quotient and Shift-Share analyses are combined with employment elasticity, labor share, structural gap, and the Employment Intensity Index to evaluate sectoral competitiveness and the output-employment relationship.

Findings/Results - The findings reveal substantial heterogeneity in sectoral transformation. Mining and manufacturing dominate several regional economies, but strong output performance does not consistently generate proportional employment. Of 18 district-sector combinations, 55.6% are classified as inelastic, 33.3% experience jobless or labor-shedding growth, and only 11.1% are elastic. The largest structural gap occurs in manufacturing, where output contribution substantially exceeds labor absorption.

Originality/Value - This study demonstrates that sectoral competitiveness does not necessarily translate into job-intensive growth. The findings highlight the need to integrate sectoral development with local economic linkages, downstream activities, MSME development, workforce skills, and employment creation.

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1. Introduction

Regional economic growth is basically not only a matter of increasing added value, but also about how this growth changes the structure of production, expands employment opportunities, and increases intersectoral connectivity. Within the framework of regional development, differences in resources, location, infrastructure, quality of workforce, and institutional capacity result in different patterns of specialization between regions. Therefore, uniform development policies risk ignoring sectors that have a strong economic base and sectors that are building new competitiveness (Arsyad, 2005; Sjafrizal, 2008; Tarigan, 2005).

The economic base theory places sectors that can serve markets outside the region as one of the sources of growth through external revenue streams and multiplier effects. Location Quotient (LQ) is widely used to identify such relative specialties. However, the LQ is static and does not explain whether the base sector is growing faster or has local competitiveness. Shift-Share complements these weaknesses by separating sectoral changes into components of regional growth, sectoral structure, and local competitiveness. Several studies in Indonesia have combined LQ and Shift-Share to identify potential and flagship sectors (Maspaiteella Harjanti 2021; Ariyanto et al., 2024).

However, the determination of the leading sectors based on concentration and output growth is not enough to assess the quality of economic transformation. Sectors with high added value can be capital-intensive, use technology that reduces worker needs, or have limited local linkages. The literature on employment elasticity shows that the response of employment to output growth varies greatly according to sectors, regions, cycle phases, and technological characteristics (Kapsos, 2006; Bhat et al., 2022; Butkus et al., 2024). Evidence in Indonesia also shows that job changes during the pandemic and recovery phases are not uniform across sectors (Ginting, Manik 2023; Widhatama et al., 2023).

This issue is relevant for the eastern region of Central Sulawesi Province. The six districts analyzed Banggai, Banggai Islands, Morowali, Tojo Una-Una, North Morowali, and Banggai Laut have different configurations of resources and economic activities. Morowali and North Morowali are thriving with mining and processing industry bases, while the archipelago and coastal districts show a more dispersed structure of agriculture, trade, services, and activities related to local resources. This variation provides context that is important for assessing whether the output transformation is in the same direction as the job transformation.

The research gap raised by this article lies in the frequent separation between the "leading sector" analysis and the "labor absorption" analysis. This article integrates the two. First, the leading sector is identified selectively only when a sector is at once the economic base ($LQ > 1$), grows relatively faster than the same sector in the reference area ($P > 0$), and has local competitiveness ($D > 0$). Second, the employment implications are read through the elasticity of employment to output, the structural gap between the share of employment and the share of GDP, the Employment Intensity Index (EII), and episodes of jobless/labor-shedding growth. Thus, the novelty of research is mainly empirical and integrative, not the creation of new methods. This article aims to answer the question: how do sectoral advantages and shifts in economic structure in the six districts of the eastern region of Central Sulawesi relate to the ability of sectoral growth to absorb labor during 2020–2024? The expected contribution is to make it clear that regional development priorities should not only refer to competitiveness and GDP contribution, but also to the sector's ability to link growth with job opportunities and the local economy.

2. Literature Review & Hypothesis Development

2.1 Sector Base and Sectoral Excellence

Base economic theory distinguishes between base and non-based activities based on the ability of a sector to meet internal needs while serving external demands. In a regional application, LQ compares the share of a sector in the analysis area with the same sector share in the reference area. An LQ value above one indicates a higher relative concentration than the comparative region and is commonly used as an indicator of the base sector (Arsyad, 2005). However, specialization is relatively not synonymous with dynamic competitiveness. Therefore, the base sector needs to be read along with the growth performance and location advantages.

Shift-Share breaks down output changes into regional shares, proportional shifts, and differential shifts. A positive proportional shift indicates that the composition of the regional sector leads to relatively fast-growing activity in the reference region; Positive differential shifts indicate a better-than-expected local performance of the sector from the pattern of the reference area. The merger of LQ and Shift-Share has been used to strengthen the classification of priority sectors, but the results should still be treated as structural diagnostic tools, rather than causal evidence of factors that generate competitiveness (Maspatella et al., 2021; Harjanti et al., 2021; Ariyanto et al., 2024).

2.2 Structural Transformation and Labor Absorption

Structural transformation ideally involves shifting resources to activities with higher productivity without cutting off the economy's ability to create adequate jobs. However, the increase in industrial contribution does not always go hand in hand with an increase in the proportion of jobs. Increased capital intensity, technology adoption, inappropriate skills, and weak local supply chains can make output grow much faster than labor (Prakash, 2022; Yusuf, 2021). The Indonesian literature also shows that the contribution of the industrial sector and the capacity of labor absorption can move at different speeds (Arham & Junus, 2020).

Employment elasticity measures the relative response of labor to changes in output. The positive value below one indicates slower job growth than output; the value above one indicates jobs are growing faster; Meanwhile, when output increases but employment decreases, the pattern can be seen as jobless or labor-shedding growth. Elasticity is not constant and sensitive to time horizons and cyclical changes, so the interpretation of short periods should be done with caution (Kapsos, 2006; Bhat et al., 2022; Butkus et al., 2024).

2.3 Integrated Analytical Framework

This article distinguishes two dimensions that are often mixed. The first dimension is the position and dynamics of the sector in the output structure base/nonbase, relative growth, and local competitiveness. The second dimension is the position and dynamics of sectors in the employment structure elasticity, intensity of employment, and the gap in the share of employment to GDP. This distinction is important because the sector can have a strong LQ and differential shift but still absorbs labor inelastically; On the other hand, sectors with small output contributions can be the main buffer of employment. This framework avoids the assumption that "flagship sectors" are automatically the "most inclusive sectors".

3. Methodology

3.1 Research Design and Setting

The research uses comparative quantitative-descriptive design. The analysis unit consists of six districts in the eastern region of Central Sulawesi Province: Banggai, Banggai Islands,

Morowali, Tojo Una-Una, North Morowali, and Banggai Laut. Central Sulawesi Province is used as a reference area. The observation horizon is 2020–2024.

3.2 Data and Variables

The data is secondary and is collected through BPS publication documentation. Key data include GDP on a constant price basis in 2010 by business sector at the provincial and district levels, sectoral GDP growth rate, and the number of people aged 15 years and above working by main occupation. For the analysis of sectoral advantages, a more detailed classification of the GDPB business field was used. For the employment analysis, the data were aggregated into three main groups: agriculture; industry/manufacturing or secondary sector; and services, according to the data structure used.

3.3 Location Quotient

LQ is calculated as the ratio of sector i share in the district GDP to the same sector share in the GDP of Central Sulawesi Province. $LQ > 1$ is classified as a base sector, $LQ = 1$ shows an equivalent proportion to the reference region, and $LQ < 1$ is classified as a non-base sector. In this article, the term base is interpreted as a relative specialization, rather than as a single piece of evidence of dynamic competitiveness.

3.4 Shift-Share and Leading-Sector Classification

Shift-Share outlines the change in sectoral GDP into regional share (R), proportional shift (P), and differential shift (D). Positive P indicates that the sector is growing relatively faster than the same sector in the reference area; A positive D indicates the superiority of local performance. A sector is classified as a flagship only if it meets three criteria simultaneously: $LQ > 1$, $P > 0$, and $D > 0$. Sectors with $LQ > 1$, $P < 0$, $D > 0$ are read as competitive based that require acceleration; sectors with $LQ < 1$, $P > 0$, $D > 0$ are read as fast-growing and competitive prospective sectors but have not yet become the basis.

3.5 Employment Elasticity and Structural Gap

The elasticity of annual labor absorption is calculated as the ratio of the labor growth rate to the sectoral real GDP growth rate. To reduce annual volatility, the size of the 2020–2024 period is calculated using the compound annual growth rate (CAGR) of labor and GDP CAGR, then the period elasticity is obtained from the ratio of the two CAGRs. Values between 0 and 1 with positive output and employment growth are categorized as inelastic; values above 1 are categorized as elastic; And when output grows but labor declines, the pattern is classified as jobless/labor-shedding growth. The dissertation uses an operational tolerance of 0.95–1.05 for elastic units; The limit is not a universal threshold.

3.6 Analytical Reproducibility and Ethical Considerations

The dissertation reports that panel processing, indicator calculation, classification, data quality check, table export, and visualization are reproduced with R (R Core Team, 2025) using `readxl`, `dplyr`, `tidyr`, `stringr`, `ggplot2`, `scales`, `janitor`, `openxlsx`, `forcats`, `tibble`, `ggrepel`, `systemfonts`, and `ragg` packages. The study used aggregated secondary data and did not involve direct interaction with participants. The source document does not report an ethical approval number.

4. Results and Discussion

4.1. Heterogeneity of Leading Economic Bases and Sectors

The six districts have different economic bases. Banggai Islands shows a wide base with 12 business fields with base status; Banggai has five base sectors; Morowali has a very strong specialization in the mining and processing industries; Tojo Una-Una and Banggai Laut have

14 and 13 base sectors, respectively; while North Morowali has a strategic base in agriculture, mining, real estate, and other services. This pattern shows that regional transformation does not take place through a single uniform sectoral path.

Table 1. Summary of structural positions and leading sectors of six districts, 2020–2024

Districts	Base (compact)	Key flagship sectors	interpretation
Banggai Kepulauan	12	No sector meets LQ>1, P>0, D>0 simultaneously	Broad base; A number of competitive/prospective bases
Banggai	5	No sector meets all criteria simultaneously	Many sectors are locally competitive; need acceleration
Morowali	Strong specialization	Mining and quarrying; Processing Industry	The most concentrated industrialization path
Tojo Una-Una	14	14 sectors: agriculture; utilities; construction; trade; transportation; accommodation; information; finance; real estate; administration; education; health; Other services	Highly diversified flagship structure
Banggai Laut	13	13 sectors in agriculture, utilities, construction, trade, transportation, accommodation, finance, real estate, administration, education, health, and other services	Relatively diversified coastal/resource economy
Morowali Utara	4	Mining and quarrying	Prospective processing industry; competitive base in other sectors

Morowali is the clearest example of how specialization can go hand in hand with the growth of the industry. Two sectors—mining and quarrying and the processing industry—meet LQ>1, P>0, and D>0. North Morowali has mining as a leading sector, while the processing industry has grown rapidly and competitively but has not yet become a base. On the other hand, Banggai Islands and Banggai show that the large number of base sectors or sectors with positive D do not automatically produce sectors that meet all three requirements simultaneously.

4.2. Labor Absorption Elasticity

Table 2. Elasticity of labor absorption by districts and sector groups, 2020–2024

Districts	Sektor	CAGR TK (%)	GDP CAGR (%)	Elasticity	Kelas
Banggai	Services	2,99	5,79	0,52	Inelastic

Districts	Sektor	CAGR TK (%)	GDP CAGR (%)	Elasticity	Kelas
Banggai Kepulauan	Services	2,28	5,91	0,39	Inelastic
Banggai Laut	Services	-2,18	5,44	-0,40	Jobless/labor-shedding
Morowali	Services	5,48	17,18	0,32	Inelastic
Morowali Utara	Services	1,26	10,70	0,12	Inelastic
Tojo Una-Una	Services	7,14	5,21	1,37	Elastic
Banggai	Industry/manufacturing	2,87	3,45	0,83	Inelastic
Banggai Kepulauan	Industry/manufacturing	-2,03	3,77	-0,54	Jobless/labor-shedding
Banggai Laut	Industry/manufacturing	-8,24	4,86	-1,70	Jobless/labor-shedding
Morowali	Industry/manufacturing	17,80	23,16	0,77	Inelastic
Morowali Utara	Industry/manufacturing	8,53	29,46	0,29	Inelastic
Tojo Una-Una	Industry/manufacturing	0,86	1,89	0,46	Inelastic
Banggai	Agriculture	-3,45	1,84	-1,88	Jobless/labor-shedding
Banggai Kepulauan	Agriculture	2,92	3,60	0,81	Inelastic
Banggai Laut	Agriculture	2,42	3,06	0,79	Inelastic
Morowali	Agriculture	6,79	1,68	4,03	Elastic
Morowali Utara	Agriculture	-3,18	3,39	-0,94	Jobless/labor-shedding
Tojo Una-Una	Agriculture	-0,61	2,65	-0,23	Jobless/labor-shedding

The distribution of results showed a dominance of a slower labor response than output: 10 of 18 combinations (55.6%) were inelastic, 6 (33.3%) were jobless/labor-shedding, and only 2 (11.1%) were elastic. Agriculture Morowali has the highest elasticity ($\epsilon=4.03$), while Tojo Una-Una's services are also elastic ($\epsilon=1.37$). On the other hand, Banggai Agriculture ($\epsilon=-1.88$), Banggai Laut manufacturing ($\epsilon=-1.70$), North Morowali Agriculture ($\epsilon=-0.94$), Banggai Islands manufacturing ($\epsilon=-0.54$), Banggai Laut services ($\epsilon=-0.40$), and Tojo Una-Una Agriculture ($\epsilon=-0.23$) showed output growth that took place along with a decrease in employment in period size.

4.3. Gap in GDP and Employment Structure

Table 3. Labor share, GDP share, structural gap, and EII, 2024

Districts	Sector	Share of TK (%)	Share of GRDP (%)	Gap (pp)	EII
Banggai	Services	47,93	20,62	+27,31	2,32
Banggai Kepulauan	Services	39,96	47,42	-7,46	0,84
Banggai Laut	Services	37,33	38,77	-1,44	0,96
Morowali	Services	40,88	2,70	+38,18	15,12
Morowali Utara	Services	33,44	10,20	+23,24	3,28
Tojo Una-Una	Services	45,53	46,53	-1,00	0,98
Banggai	Industry/manufacturing	15,52	59,22	-43,70	0,26
Banggai Kepulauan	Industry/manufacturing	13,60	5,50	+8,10	2,47
Banggai Laut	Industry/manufacturing	7,40	5,66	+1,73	1,31
Morowali	Industry/manufacturing	25,35	95,79	-70,44	0,26
Morowali Utara	Industry/manufacturing	21,35	73,38	-52,03	0,29
Tojo Una-Una	Industry/manufacturing	9,60	16,67	-7,06	0,58
Banggai	Agriculture	36,55	20,16	+16,39	1,81
Banggai Kepulauan	Agriculture	46,43	47,07	-0,64	0,99
Banggai Laut	Agriculture	55,28	55,57	-0,29	0,99
Morowali	Agriculture	33,77	1,51	+32,26	22,33
Morowali Utara	Agriculture	45,21	16,41	+28,79	2,75
Tojo Una-Una	Agriculture	44,86	36,80	+8,06	1,22

The largest structural gap is found in districts whose output is concentrated in Industry/manufacturing. Morowali recorded a share of manufacturing/secondary GDP of 95.79% compared to the share of labor of 25.35%, resulting in a gap of -70.44 percentage points and EII of 0.26. North Morowali showed a gap of -52.03 pp and EII 0.29; Banggai gap -43.70 pp and EII 0.26. On the other hand, Agriculture and Services in Morowali has a much larger share of the workforce than the share of output. This pattern confirms that the sectoral position in GDP is not identical to the sectoral position as a job absorber.

4.4. Jobless/Labor-Shedding Growth on Annual Data

Table 4. Annual observation frequency of jobless/labor-shedding growth, 2020–2024

Sector groups	Jobless observation	Proportion	Notes
Agriculture	13 of 24	54,2%	Banggai and North Morowali each have 3 out of 4 intervals
Industry/manufacturing	9 of 24	37,5%	Banggai Islands, Banggai Laut, Morowali among others experience annual episodes
Services	7 of 24	29,2%	Banggai Laut experienced 2 out of 4 intervals

Sector groups	Jobless observation	Proportion	Notes
Total	29 of 72	40,3%	Jobless growth spread across sectors and regions

A total of 29 out of 72 sector-year observations (40.3%) met the conditions of positive GDP growth with zero or negative labor growth. Agriculture had the highest frequency, which was 13 out of 24 observations (54.2%). Banggai Laut showed the widest spread of annual episodes among the three sector groups, while Banggai and North Morowali each experienced jobless growth in Agriculture in three of the four annual intervals.

4.5 Discussion

4.5.1 Sectoral Excellence Is Not the Same as Employment Inclusivity

The main finding of this article is the empirical separation between the advantages of the sector in the output structure and the ability of the sector to create jobs. The LQ–Shift–Share mix model shows which sectors are at the same time specialized, growing relatively fast, and have local competitiveness. However, the analysis of elasticity and structural gaps shows that these statuses should not be automatically translated as high labor absorption capabilities. This is important because regional policies often use GDP contribution or base status as indicators of sectoral success, while the distribution of jobs can paint a different picture.

Morowali illustrates this difference most powerfully. Mining and processing are the leading sectors in the output classification, but the aggregate industry/manufacturing only absorbs 25.35% of the workforce when it accounts for 95.79% of GDP in 2024. The gap –70.44 pp indicates that the production transformation takes place much faster than the job transformation. These findings are consistent with the argument that increasingly capital-intensive industrialization can increase output and productivity without adding jobs in equal proportions (Prakash, 2022). The adoption of technology and changes in the composition of skills demand can also change the relationship between output and employment (Yusuf, 2021). The mechanism is a plausible explanation, but it was not causally tested by the design of this study.

Similar patterns in North Morowali and Banggai reinforce the interpretation that the concentration of industrial added value does not guarantee employment intensity. North Morowali recorded a GDP CAGR of 29.46%, the highest in the sample—but a labor CAGR of 8.53%, so the elasticity was only 0.29. Banggai has a manufacturing elasticity of 0.83, but the manufacturing/secondary GDP share of 59.22% is far above its labor share of 15.52%. This difference is in line with studies showing that the contribution of industry and the capacity to absorb labour can move disproportionately between regions (Arham & Junus, 2020).

4.5.2 The Meaning of Jobless Growth and Regional Heterogeneity

Jobless/labor-shedding growth is not limited to industrial areas. In the size of the 2020–2024 period, a negative pattern appeared in Banggai Laut Services; manufacturing of Banggai Islands and Banggai Laut; and Agriculture Banggai, North Morowali, and Tojo Una-Una. On the annual frequency, Agriculture even has the highest proportion of episodes. Thus, the weak transmission of output to work is not only a problem of manufacturing technology, but can also reflect adjustments in labor, productivity, changes in business composition, migration, or cyclical shocks. Since the beginning of the period coincided with the pandemic, the results need to be read as a 2020–2024 pattern, rather than a permanent structural parameter.

The literature supports this caution. Bhat et al. (2022) point out that the elasticity of employment to output can change according to macro conditions, while Butkus et al. (2024) emphasize that the probability of jobless growth differs between sectors and economic contexts. Indonesia's evidence during the pandemic also shows heterogeneous work adjustments between regions and sectors (Ginting et al., 2023; Manik et al., 2023; Widhatama et al., 2023). Because of this, annual episodes are not necessarily synonymous with long-term trends; The use of CAGR in this study helps capture the direction of the period but still does not eliminate the limitations of the five-year horizon.

4.5.3 Relative Labor-Intensive Sector as a Buffer for Transformation

A comparison of the share of labor and GDP shows that Agriculture and Services function as a buffer for employment in several districts. In Morowali, Agriculture only contributes 1.51% of GDP but accommodates 33.77% of the workforce, while Services contributes 2.70% of GDP but accommodates 40.88% of the workforce. This does not mean that both sectors are "better" in terms of productivity; In fact, a very positive gap can indicate labor concentration in sectors with relatively low added value. Thus, it is not enough for policies to just maintain jobs, but to improve productivity, quality of work, and linkages with high-value-added sectors.

Morowali Agriculture is one of two combinations that are elastic in period size, but its interpretation needs to be differentiated from EII. An elasticity of 4.03 indicates faster labor force growth than output growth during 2020–2024, while an EII of 22.33 indicates a very large structural position of employment compared to the output contribution in 2024. The two indicators answer different questions: elasticity is a dynamic response; EII and structural gap are structural positions. This distinction is one of the important analytical contributions of the article

4.5.4 Implications for Leading Sector Policies

The main implication is the need for a two-dimensional priority matrix. The first dimension assesses whether the sector has a local base, relative growth, and competitiveness. The second dimension assesses whether sector growth creates jobs, strengthens local linkages, and improves the suitability of the output–employment structure. A superior but low-work-intensity sector requires supply chain connectivity policies, the development of local suppliers, vocational training, competency certification, and the expansion of downstream that opens derivative activities. The labour-intensive sector that contributes low output requires an agenda of productivity, appropriate technology, market access, and increased added value.

For Morowali and North Morowali, the strengthening of downstream should not only be measured by the added value of the industry, but also by how much the local supply chain and supporting businesses are able to absorb workers. For Tojo Una-Una and Banggai Laut, the breadth of the leading sectors provides diversification opportunities, but the annual jobless growth episode shows the need to evaluate the quality of growth per sector. For Banggai Islands and Banggai, policies can prioritize competitive-based and prospective sectors so that increased competitiveness is accompanied by measurable job creation

4.5.5 Theoretical and Empirical Contributions

Theoretically, the findings support a reading of structural transformation as a multidimensional process: changes in output composition are not automatically synonymous with changes in job composition. Empirically, the article shows three configurations: (1) industrialization is highly concentrated with large job gaps, especially Morowali and North Morowali; (2) a more balanced structure in Agriculture/Services but still experiencing episodes of jobless growth, such as Banggai Laut; and (3) a relatively balanced service structure and

having one of the elastic job responses, such as Tojo Una-Una. This variation suggests that transformation policies need to be region-specific, not a one-size-fits-all design

5. Conclusion and Suggestion

This study shows that sectoral excellence and labor absorption ability are two interrelated but not identical. The LQ-Shift-Share mixes model results in a more selective classification of superior sectors than the use of base status alone. Morowali places mining and processing industries as leading sectors; North Morowali places mining as the flagship and the processing industry as a prospective sector; Tojo Una-Una and Banggai Laut have a wider superior structure; while Banggai Islands and Banggai do not yet have sectors that meet all criteria simultaneously.

On the employment side, most region-sector combinations do not show a job response comparable to output growth. As many as 55.6% of the combination was inelastic and 33.3% were in the jobless/labor-shedding pattern, while only 11.1% were elastic. The largest gap between the output and employment structure occurs in the Morowali, North Morowali, and Banggai industries. These findings answer the purpose of the article that economic transformation in the eastern region of Central Sulawesi has not moved through a uniform trajectory and that sectoral success in GDP cannot be used as a single proxy for successful job creation.

The main policy contribution is the need to combine competitiveness assessment with employment transmission. The development strategy of leading sectors needs to expand local supply chains, downstreaming, the development of supplier MSMEs, vocational education and training, as well as increasing the productivity of sectors that support jobs. The approach is more consistent with the goal of economic transformation that not only generates added value but also expands the benefits of growth for the local job market

6. Limitations and Future Research

First, the 2020–2024 period only covers five years and is fraught with pandemic shocks and recovery phases, so it does not represent a full business cycle. The coefficient of elasticity should not be treated as a permanent parameter.

Second, employment data is aggregated into three large groups. Industry/manufacturing includes mining, processing industry, utilities, water/waste, and construction; Services combine activities with different technologies and quality of work; while Agriculture includes forestry and fisheries. Therefore, employment results cannot be mapped one by one precisely to all 17 business fields in the analysis of leading sectors.

Third, aggregated data did not identify individual movements between sectors, formal–informal status, working hours, education, gender, migration, or job quality.

Fourth, elasticity is descriptive and does not control wages, investments, capital stocks, technology, productivity, number of companies, or institutional factors. Therefore, the article does not make causal claims about the causes of jobless growth or low work intensity.

7. Implications and Recommendations

- a. Use the LQ-Shift-Share combination to differentiate between leading, base-competitive, and prospective sectors, rather than relying solely on base status.

- b. Add employment indicators in the regional development dashboard: employment elasticity, labor share, structural gap, EII, and frequency of jobless growth.
- c. In capital-intensive industrial areas, policies focus on local linkages: local suppliers, downstreaming, supporting MSMEs, competency certification, and local company-labor partnerships.
- d. In sectors with high labor concentration but low output contributions, prioritize productivity, agroindustry, market access, technology, and diversification of non-agricultural jobs.
- e. Subsequent research needs to extend the data horizon and use panel/spatial models and micro data to examine the role of wages, investments, technology, education, productivity, migration, and corporate structure as explanations of the output–employment relationship.

Reference

- Andriyani, V. E., & Irawan, T. (2018). Identification of premature deindustrialization and its acceleration in Indonesia (Period 1986–2015). *Jurnal Ekonomi dan Kebijakan Pembangunan*, 7(1), 78–101. <https://doi.org/10.29244/jekp.7.1.2018.78-101>
- Arham, M. A., & Junus, S. (2020). Contributing factors of labor productivity in the industrial sector in Indonesia: A comparative study among regions. *Jurnal Perspektif Pembiayaan dan Pembangunan Daerah*, 8(3), 277–286. <https://doi.org/10.22437/ppd.v8i3.9626>
- Ariyanto, A., Harmaidi, D., Khairunnas, & Yasid, H. (2024). Analysis of location quotient and shift share in Riau Province. *Agrosocionomics*, 8, 71–81. <https://doi.org/10.14710/agrisocionomics.v8i1.17136>
- Arsyad, L. (2005). *Pengantar Perencanaan dan Pembangunan Ekonomi Daerah (Edisi Kedua)*. BPFE.
- Bhat, J. A., Haq, I. ul, Bhat, S. A., & Megits, N. (2022). Employment elasticity of output growth in Kazakhstan economy: Recent evidence from a macroeconomic perspective. *Journal of Eastern European and Central Asian Research*, 9(2), 369–384. <https://doi.org/10.15549/jeecar.v9i2.852>
- Butkus, M., Dargenytė-Kacilevičienė, L., Matuzevičiūtė, K., Ruplienė, D., & Šeputienė, J. (2024). When and for whom does growth becomes jobless? *Economies*, 12(1), 19. <https://doi.org/10.3390/economies12010019>
- Ginting, B. V., Giri, C. E. A. G., Khansabyla, F., Azzahra, I. P., Asrofi, M., & Putri, R. F. (2023). The dynamic of labors absorption during the COVID-19 pandemic in Bangka Belitung Islands. *E3S Web of Conferences*, 468, 06018. <https://doi.org/10.1051/e3sconf/202346806018>
- Harjanti, D. T., Apriliyana, M. I., & Arini, A. C. (2021). Analysis of regional leading sector through location quotient approach, shift share analysis, and Klassen typology (Case study: Sanggau Regency, West Kalimantan Province). *Jurnal Geografi Gea*, 21(2), 147–158.
- Kapsos, S. (2006). The Employment Intensity of Growth: Trends and Macroeconomic Determinants. In *Palgrave Macmillan UK eBooks* (pp. 143–201). https://doi.org/10.1057/9780230627383_4

- Kiak, N. T., Ratu, M., Tiwu, M. I., & Tomasowa, O. L. E. (2022). Analysis of Labor Absorption in East Nusa Tenggara Province 2016–2020 Period. *Eduvest—Journal of Universal Studies*, 2(1), 173–181. <https://doi.org/10.59188/eduvest.v2i1.334>
- Mangun, N., Djirimu, M., Siame, N. F. Dg., & Yohan, Y. (2023). Determinant factors on labor absorption in small and medium industries in Central Sulawesi Province Eastern Indonesia in 2016–2021. *Journal of Economics Finance and Management Studies*, 6(5). <https://doi.org/10.47191/jefms/v6-i5-19>
- Manik, Y. M., Prasetyo, N. E., Sulisty, S., & Waluyo, M. (2023). Analysis of the dynamics of labor absorption in West Sumatra Province in 2018–2020. *Jurnal Pendidikan Ilmu Sosial*, 32(2), 226–247. <https://doi.org/10.23917/jpis.v32i2.20367>
- Mardalena, Adji, A., Suhel, Andaiyani, S., & Harunurrasyid. (2019). How Leading Economic Sectors Stimulate Economic Growth, Income and Labor Absorption? Input-Output Approach. *International Journal of Economics and Financial Issues*, 9(1), 234–244. <https://doi.org/10.32479/ijefi.6406>
- Maspaitella, M., Parinussa, S. M., & Tewernusa, K. I. (2021). Applying location quotient and shift-share analysis in determining leading sectors in Teluk Bintuni Regency. *Journal of Developing Economies*, 6(1), 55.
- Mubarak, M. S., & SBM, N. (2020). The impact of population, labor, unemployment, and poverty on economic growth regencies/municipality in Sulawesi Tengah Province. *Jurnal Ekonomi Pembangunan*, 18(1), 62. <https://doi.org/10.22219/jep.v18i1.11736>
- Nurfika, & Maswana, J. (2021). The Role of the Secondary Sector in Poverty Alleviation in Indonesia. *The Journal of Indonesia Sustainable Development Planning*, 2(2), 111–128. <https://doi.org/10.46456/jisdep.v2i2.113>
- Prakash, D. (2022). Analysis of output and employment of trade in India: A case of rising capital intensity and its implications. *International Journal of Finance Research*, 3(2), 113–134. <https://doi.org/10.47747/ijfr.v3i2.759>
- R Core Team. (2025). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria.
- Siatan, M. S., & Zuliansyah, A. (2023). Economic Growth on Labor Absorption: District/City Panel Data Analysis in Lampung Province. *International Journal of Professional Business Review*, 8(7), e02584. <https://doi.org/10.26668/businessreview/2023.v8i7.2584>
- Sjafrizal. (2008). *Ekonomi Regional: Teori dan Aplikasi*. Baduouse Media.
- Tarigan, R. (2005). *Perencanaan Pembangunan Wilayah*. Bumi Aksara.
- Widhatama, A. F., Sabrina, G., Wulandari, H., Setyastuti, I. A., Putra, J. H., & Putri, R. F. (2023). The changes of employment and labor productivity in South Sulawesi Province, Indonesia during the COVID-19 pandemic. *E3S Web of Conferences*, 468, 06016. <https://doi.org/10.1051/e3sconf/202346806016>
- Yusuf, A. A. (2021). The impact of Industry 4.0 on the Indonesian economy: A general equilibrium assessment. *Regional Science Policy & Practice*, 13(6), 1805–1825. <https://doi.org/10.1111/rsp3.12463>