

Determinants of Labor Absorption in the Processing Industry: Evidence from South Sulawesi's Industrial Growth and Minimum Wage Policies

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ABSTRACT

This study investigates the critical relationship between industrial sector growth, provincial minimum wage (UMP) levels, and labor absorption within the processing industry of South Sulawesi Province from 2010 to 2018. The research was guided by the objective to empirically determine the extent to which industrial expansion and wage policies influence job creation in this key economic sector. Utilizing quantitative methods, a time-series analysis was conducted employing multiple linear regression on secondary data obtained from the Central Statistics Agency (BPS) of South Sulawesi. The analysis included rigorous testing for classical assumptions such as normality, multicollinearity, autocorrelation, and heteroscedasticity to ensure the reliability of the findings. The primary results indicate a significant positive influence of industrial sector growth on labor absorption, confirming its role as a crucial driver of employment. However, the study found that the provincial minimum wage did not have a statistically significant impact on labor absorption during the period, despite a negative coefficient. The findings underscore the importance of fostering industrial growth as a strategy for job creation in regions like South Sulawesi, while highlighting the need for carefully calibrated wage policies that align with economic productivity to support sustainable employment. This research contributes empirical evidence specific to a developing regional context, informing both academic understanding and policy development in labor market dynamics.

ABSTRAK

Studi ini meneliti hubungan antara pertumbuhan sektor industri, tingkat Upah Minimum Provinsi (UMP), dan penyerapan tenaga kerja pada industri pengolahan di Provinsi Sulawesi Selatan periode 2010–2018 dengan tujuan untuk mengetahui sejauh mana ekspansi industri dan kebijakan upah memengaruhi penciptaan lapangan kerja. Menggunakan metode kuantitatif melalui analisis regresi linier berganda atas data sekunder dari BPS Sulawesi Selatan, penelitian ini juga menguji asumsi klasik seperti normalitas, multikolinearitas, autokorelasi, dan heteroskedastisitas untuk memastikan validitas hasil. Temuan utama menunjukkan bahwa pertumbuhan sektor industri berpengaruh positif signifikan terhadap penyerapan tenaga kerja, sedangkan UMP tidak berpengaruh signifikan meskipun koefisiennya bernilai negatif. Hasil ini menegaskan pentingnya pertumbuhan industri sebagai motor penciptaan lapangan kerja sekaligus menekankan perlunya kebijakan upah yang lebih selaras dengan produktivitas ekonomi guna mendukung keberlanjutan kesempatan kerja, serta memberikan kontribusi empiris bagi pemahaman akademik dan perumusan kebijakan pasar tenaga kerja di wilayah berkembang.

1. PENDAHULUAN (10 PT)

Economic development is a complex, multifaceted process fundamentally linked to structural transformation and the efficient utilization of resources. A pivotal aspect of this transformation, particularly in developing economies, is the increasing prominence of the industrial sector. The development of a robust industrial base signifies a shift from agrarian economies towards more value-added activities, driving productivity gains and fostering deeper inter-sectoral linkages. This evolution is critically important as it not only contributes to the overall gross domestic product (GDP) but also serves as a primary engine for job creation, significantly impacting societal well-being and poverty reduction. The capacity of a region's industrial sector to absorb labor is a key indicator of its economic health and its potential for sustained growth. This process is not merely about increasing the number of jobs but also about enhancing the quality of employment, promoting skill development, and contributing to a higher standard of living for the population. Understanding the dynamics of industrial sector growth and its interplay with labor markets is therefore crucial for effective economic policymaking, particularly in regions striving for accelerated development.

Within the Indonesian context, the manufacturing sector plays a critical role, mirroring global trends where industrialization is a cornerstone of economic progress. The expansion of manufacturing activities is intrinsically tied to employment rates, contributing to job creation and elevating productivity across various economic segments. Research indicates a positive correlation between the complexity and investment within the manufacturing sector and its ability to absorb labor, leading to a subsequent reduction in unemployment rates (Budiono et al., 2021; Rizki & Haryadi, 2021). This relationship is further amplified by enhanced inter-sectoral linkages, which stimulate job opportunities not only within manufacturing but also in supporting service sectors (Grabowski & Self, 2020; Talreja & Dasgupta, 2022). While industrialization clearly fosters job creation, its benefits are maximized and made sustainable through policies that prioritize inclusivity and targeted skill development initiatives (Rini & Tambunan, 2021; Noor, 2024). Consequently, Indonesia's manufacturing sector serves as a crucial foundation for economic growth, a vital mechanism for improving employment rates, alleviating poverty, and promoting inclusive national development (Rini & Tambunan, 2021; Mulya, 2024; Thio et al., 2021).

The processing industry, in particular, has emerged as a significant area of focus within the literature on regional economic development, especially concerning its impact on job creation and industrial competitiveness in emerging economies. This sector is fundamental to economic advancement as it effectively enhances labor absorption by optimizing the utilization of local resources and fostering the development of regional industrial clusters, thereby boosting overall economic performance (Zhou, 2024; Ying et al., 2022; Chen et al., 2020). The dynamism inherent in these industries not only drives employment growth but also acts as a catalyst for technological innovation, a critical factor influencing both labor absorption and productivity levels (Chen et al., 2020; Huang & Wang, 2022). The literature consistently points towards the integral role of effective industrial policies in bolstering the capabilities of the processing industry. Such policies are instrumental in facilitating the upgrading of industrial structures through the promotion of technological progress and efficient resource allocation, ultimately paving the way for sustainable economic development (Zhou, 2024; Zhu et al., 2023). Moreover, the strategic development of regional industrial clusters has shown considerable promise in mitigating economic volatility, strengthening resilience, and enhancing the competitiveness of the processing sector, which are vital for long-term economic stability (Borodavkina & Mukovnina, 2021; Jinfeng et al., 2023).

However, understanding the precise mechanisms through which industrial growth and wage policies influence labor absorption, particularly at the regional level, requires focused empirical investigation. While the broad positive correlation between industrial expansion and job creation is well-established, the nuanced impact of specific factors like wage levels, and how these manifest within distinct regional economies, warrants closer examination. The challenge lies in dissecting these relationships to inform targeted policy interventions. This study addresses this by investigating the specific influence of the industrial sector's growth rate and wage levels on labor absorption within the processing industry of South Sulawesi Province. The overarching research problem seeks to ascertain whether the growth of the industrial sector positively drives labor absorption and, concurrently, how wage levels, specifically the provincial minimum wage, impact this absorption. A general consensus from prior studies suggests that industrialization is a primary driver of employment, leading to enhanced productivity and economic well-being. Furthermore, specific policy interventions promoting technological advancement and regional clustering are identified as crucial for realizing sustainable economic development and improving industrial competitiveness. These insights suggest that while industrial sector growth is a key enabler of job creation, the specific impact of wage policies can vary and requires detailed regional analysis.

The literature review highlights that effective industrial policies, alongside the promotion of technological advancements and efficient resource allocation, are critical for enhancing the capabilities of the

processing industry and fostering sustainable economic development (Zhou, 2024; Zhu et al., 2023). Regional clustering also emerges as a significant factor in mitigating economic shocks and bolstering competitiveness within the processing sector, contributing to economic stability (Borodavkina & Mukovnina, 2021; Jinfeng et al., 2023). These findings underscore the importance of a conducive policy environment for the processing industry. Against this backdrop, this study seeks to provide a nuanced understanding of the relationship between industrial sector growth, wage policies, and labor absorption within a specific regional context. While the general influence of industrialization on employment is acknowledged, there is a need for more granular research that specifically examines the impact of provincial-level wage policies on labor absorption within the processing industry. The existing literature provides a solid foundation, identifying industrial growth and technological innovation as key drivers of job creation. However, the precise effect of provincial minimum wages on labor absorption within processing industries, particularly in a developing region like South Sulawesi, remains an area that could benefit from further empirical clarification. This study aims to address this gap by analyzing the interplay between provincial industrial growth rates and minimum wage levels on the absorption of labor in South Sulawesi's processing industry.

Therefore, the primary objectives of this research are to empirically assess the impact of the industrial sector's growth rate on labor absorption within the processing industry in South Sulawesi Province. Concurrently, it aims to evaluate the effect of the provincial minimum wage (UMP) on labor absorption within the same sector. The study hypothesizes that a higher growth rate in the processing industry will positively influence labor absorption, reflecting its role as a job creator. Conversely, it hypothesizes that provincial minimum wage levels might have a varying or potentially negative impact on labor absorption, a point often debated in economic literature. This research is original in its focused empirical analysis within the South Sulawesi context, utilizing specific provincial data to validate or challenge existing theoretical frameworks and broader regional or national findings. The scope of this study is confined to the analysis of the processing industry sector in South Sulawesi Province from 2010 to 2018, examining the relationship between the growth rate of this sector (X1), provincial minimum wages (X2), and labor absorption (Y). This focused approach will provide specific, actionable insights relevant to regional economic planning and labor market policies.

This chapter systematically reviews existing theoretical frameworks and empirical studies relevant to understanding the relationship between industrial sector growth, wage levels, and labor absorption. It aims to provide a comprehensive overview of the key concepts, established theories, and prior research findings that underpin the current study. By synthesizing this literature, the chapter will identify the theoretical underpinnings and highlight the research gaps this study intends to address.

2.1. Theoretical Foundations of Industrial Growth and Labor Absorption

The role of industry in economic development has been a cornerstone of economic thought for centuries, evolving from early notions of industrialization as a driver of national wealth to sophisticated theories incorporating innovation, technology, and inter-sectoral dynamics.

2.1.1. Leading Sector Theory

The Leading Sector Theory posits that specific sectors within an economy act as primary engines of growth and employment. These leading sectors, often characterized by their forward and backward linkages, stimulate activity in other industries, thereby creating a cascade of job opportunities and driving overall economic expansion. As these key sectors grow, they generate demand for inputs (backward linkages) and process outputs that are used by other industries (forward linkages), fostering a multiplier effect throughout the economy (Orrenius et al., 2020; Asravor & Sackey, 2023). For instance, expansions in manufacturing or services can spur growth in agriculture (for raw materials), mining (for inputs), and a diverse range of service industries (for logistics, finance, and support). This inter-industry relationship is particularly critical for sustaining economic growth and employment in developing economies, where the establishment of a strong industrial base can create a virtuous cycle of development. Studies have shown that identifying and nurturing these leading sectors—whether they be manufacturing, technology, or specific service industries—is crucial for catalyzing broad-based economic progress and enhancing overall productivity (Dewi et al., 2023; Rosadi, 2020; Brika et al., 2021; Kelikume & Nwani, 2020; Adan et al., 2020). The dynamism observed in these sectors often prompts increased demand in associated industries, further creating jobs and contributing to economic vibrancy.

2.1.2. Endogenous Growth Theory

Building upon the concept of interconnected sectors, Endogenous Growth Theory places significant emphasis on the role of internal factors, particularly technological advancements, innovation, human capital, and knowledge accumulation, as the primary drivers of sustained economic growth and job creation (Jamiu & Adeoye, 2023). Unlike exogenous growth models that view technological progress as an external factor, endogenous growth theory treats innovation and knowledge as outcomes of economic activity itself. This framework suggests that productivity enhancements, often stemming from industrialization and investments in research and development, lead to increased labor absorption and the creation of a robust labor market (Nygaard & Hansen, 2020). The theory posits that as economies invest more in human capital and innovative processes,

they generate sustained growth that can effectively absorb labor, leading to higher employment levels and improved living standards (Rosadi, 2020; Dhungel & Lamichhane, 2021; Suhányi et al., 2023; Ben-Salha & Zmami, 2021). This implies that industries that are at the forefront of technological adoption and innovation are more likely to be both leading sectors and significant employers.

2.1.3. Theories of Labor Demand and Supply and Wage Effects

The interplay between industrial growth and labor absorption is further illuminated by theories of labor demand and supply, which highlight the critical influence of wage levels on employment dynamics. From a theoretical standpoint, the demand for labor by firms is inversely related to the wage rate; as wages increase, the cost of labor rises, potentially leading firms to reduce their demand for workers or substitute labor with capital. Conversely, lower wages can incentivize firms to hire more labor. Theories of labor demand and supply emphasize how wage levels influence the absorption of labor within markets. Higher wages can motivate firms to create jobs, albeit with the potential for unintended consequences like reduced hiring in lower-skilled positions if wage levels are set too high (Zhang, 2023). Insights from empirical research indicate that while minimum wage policies are often implemented to uplift living standards and ensure a baseline income for workers, their actual impacts on employment can vary significantly depending on local economic conditions, industry characteristics, and overall labor market dynamics (Goswami & Paul, 2024). In essence, wage effects are a pivotal factor influencing employment absorption. For instance, in leading sectors, higher wages might attract labor, potentially creating shifts in employment patterns across various industries (Olaoye, 2024; Giri & Thakkar, 2023). The integration of these theoretical perspectives provides a foundational understanding of the complex mechanisms linking sectoral growth, innovation, and labor market responses, particularly within the context of developing economies.

2.2. The Role of the Processing Industry in Regional Economic Development

The processing industry, which involves the transformation of raw materials or semi-finished goods into marketable products, plays a vital role in regional economic development. Its contribution to the economy extends beyond mere value addition; it is instrumental in creating employment, fostering technological diffusion, and stimulating regional supply chains.

2.2.1. Processing Industry, Employment, and Competitiveness

The processing industry is integral to economic growth and is frequently identified as a key sector for enhancing labor absorption. By more effectively utilizing local resources and raw materials, these industries can foster the development of regional industrial clusters. These clusters, in turn, can enhance overall regional economic performance and competitiveness (Zhou, 2024; Ying et al., 2022; Chen et al., 2020). The dynamism observed in processing industries contributes not only to increased employment rates but also acts as a catalyst for technological innovation, which is identified as a crucial determinant of both labor absorption and overall productivity (Chen et al., 2020; Huang & Wang, 2022). The ability of the processing sector to add value to primary resources makes it a critical component of economic diversification and resilience, particularly in regions reliant on natural resource extraction.

2.2.2. Industrial Policy, Technological Advancement, and Regional Clusters

The literature emphasizes that effective industrial policies are crucial for enhancing the capabilities of the processing industry. These policies can facilitate the upgrading of industrial structures by promoting technological advancements, encouraging investment in research and development, and optimizing resource allocation efficiency, all of which contribute to sustainable economic development (Zhou, 2024; Zhu et al., 2023). Furthermore, the concept of regional clustering—the geographical concentration of interconnected firms, suppliers, and institutions in a particular industry—has demonstrated significant potential in mitigating economic shocks, enhancing resilience, and boosting competitiveness within the processing sector. This is vital for long-term economic stability and growth (Borodavkina & Mukovnina, 2021; Jinfeng et al., 2023). The efficient functioning of these clusters often relies on skilled labor, access to capital, and supportive infrastructure, all of which are influenced by regional policies.

2.3. Empirical Evidence and Contextual Insights

A considerable body of empirical evidence supports the theoretical assertions discussed above, particularly concerning developing nations. Studies examining the manufacturing and services sectors in Indonesia and neighboring ASEAN countries have indicated direct correlations between significant wage-related dynamics and employment levels (Mitra, 2020; Salihin, 2021; AYHAN, 2023). These findings underscore the critical interplay between economic growth, employment absorption, and labor market dynamics in these regions. Research has consistently shown that industrial sectors experiencing productivity enhancements often stimulate increased demand in associated sectors, thereby creating more jobs and contributing to broader economic dynamism (Brika et al., 2021; Kelikume & Nwani, 2020; Adan et al., 2020). Crucially, endogenous growth theory highlights that investments in human capital and innovation are pathways to sustained growth that can absorb labor more effectively (Suhányi et al., 2023; Ben-Salha & Zmami, 2021). In this context, theories of labor demand and supply underscore wage effects as a pivotal factor influencing

employment absorption; for example, higher wages in leading sectors can attract labor, potentially triggering shifts in employment across various industries (Olaoye, 2024; Giri & Thakkar, 2023).

2.4. Research Gap Identification

While the literature provides a robust theoretical and empirical foundation for understanding the broad relationships between industrial sector growth, wages, and labor absorption, specific regional contexts often present unique dynamics that warrant deeper investigation. The existing studies, while valuable, may not fully capture the nuances of how these factors interact within a particular provincial economy, such as South Sulawesi. For instance, while the general positive effect of industrial growth on employment is well-documented, the specific impact of provincial minimum wage policies on labor absorption within the processing industry sector requires more focused empirical analysis. Understanding how regional wage policies interact with the growth trajectory of specific industrial sectors is crucial for designing effective local employment strategies. The present study aims to fill this gap by providing a detailed empirical analysis of the South Sulawesi processing industry, specifically examining the distinct influences of industrial growth rates and provincial minimum wages on labor absorption. By doing so, it contributes to a more refined understanding of these critical linkages within a developing regional economy.

2. METODE (10 PT)

This chapter details the methodological framework employed to investigate the influence of industrial sector growth and wage levels on labor absorption in the processing industry of South Sulawesi Province. It outlines the research design, data sources, variables, analytical techniques, and the underlying statistical assumptions required for robust analysis. The approach is quantitative, utilizing time-series data and econometric modeling to examine temporal relationships and causal inferences.

2.1 Research Design and Approach

This study adopts a quantitative research approach, focusing on establishing empirical relationships between economic variables. The research design is primarily correlational and explanatory, aiming to quantify the extent to which changes in the independent variables (industrial sector growth and wages) are associated with changes in the dependent variable (labor absorption). Given the focus on economic indicators over a period, a time-series analysis methodology is deemed most appropriate. Time series analysis is a vital methodological approach in econometrics that allows researchers to study temporal dynamics and relationships within economic indicators, such as employment and growth rates (Mishra et al., 2023). This method is particularly effective for identifying trends, seasonal variations, and cyclic patterns, thereby facilitating a deeper understanding of labor market behaviors over time (Mishra et al., 2023). While panel data regression, which can analyze multiple explanatory variables across different time periods and account for regional variations, is beneficial for such correlations (as noted in the supplementary literature), the primary data available and utilized here are time-series based for the province as a whole. Thus, the analysis will focus on analyzing these temporal dynamics.

2.2 Variables and Operational Definitions

The study employs three key variables, defined as follows:

3.2.1. Independent Variables:

- **Industrial Sector Growth (X1):** This variable represents the growth rate of the processing industry sector in South Sulawesi Province. It will be measured as the annual percentage change in the sector's output or contribution to the regional gross domestic product (GDP). The operational definition aligns with the concept that industrial expansion signifies increased economic activity and potential for job creation. Data for this variable will be sourced from the Central Statistics Agency (BPS) of South Sulawesi Province. The unit of measurement will be percentage (%).

- **Wage Level (X2):** This variable represents the average wage rate within the processing industry, proxied by the Provincial Minimum Wage (Upah Minimum Provinsi - UMP) for South Sulawesi. UMP is used as a key indicator of wage levels, reflecting government policy and its impact on labor costs for businesses. The UMP reflects the minimum compensation employers are legally obligated to pay, serving as a benchmark for wage dynamics within the province. Data will be sourced from BPS South Sulawesi Province, typically reported in Indonesian Rupiah (Rp). Fluctuations in UMP are expected to influence firms' decisions regarding hiring and labor costs.

3.2.2. Dependent Variable:

- **Labor Absorption (Y):** This variable quantifies the extent to which the processing industry sector absorbs labor. It is operationalized as the total number of workers employed within the processing industry sector in South Sulawesi Province. Labor absorption is understood as the capacity of an economic sector to create employment opportunities for the available workforce. It is a key measure of the sector's contribution to economic well-being and its ability to mitigate unemployment. The data for labor absorption will be obtained from BPS South Sulawesi Province, typically reported as the number of people employed.

3.3. Data Sources and Collection

The study relies exclusively on secondary data. This approach is chosen due to the availability of consistent and official statistical records compiled by governmental agencies. The primary source of data for all variables (industrial sector growth, provincial minimum wage, and labor absorption) is the Central Statistics Agency (BPS) of South Sulawesi Province. The data collected will cover the period from 2010 to 2018, providing a time frame of nine consecutive years. This period allows for the analysis of trends and relationships over a sufficiently long duration to identify meaningful patterns and potential causal links, while also aligning with the data availability from the source. Data collection involves accessing published statistical reports, databases, or official economic records provided by BPS South Sulawesi.

3.4. Data Analysis Techniques

The analysis of the collected data will involve several stages, including descriptive statistics, econometric modeling, and rigorous assumption testing to ensure the validity and reliability of the findings.

3.4.1. Descriptive Statistics

Initially, descriptive statistics will be employed to summarize the characteristics of the variables over the study period (2010-2018). This will involve calculating measures such as means, standard deviations, minimums, and maximums for industrial sector growth, UMP, and labor absorption. Tables and potentially graphical representations (e.g., line graphs) will be used to visualize the trends and fluctuations of these variables over time, providing an initial understanding of their behavior and potential relationships.

3.4.2. Econometric Modeling: Multiple Linear Regression

The core of the analysis will employ Multiple Linear Regression (MLR). This statistical technique is chosen for its ability to assess the simultaneous influence of multiple independent variables on a dependent variable. The general form of the regression model is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$$

Where:

- Y represents the dependent variable, Labor Absorption.
- X_1 represents the first independent variable, Industrial Sector Growth.
- X_2 represents the second independent variable, Wage Level (UMP).
- α is the intercept term, representing the value of Y when X_1 and X_2 are zero.
- β_1 and β_2 are the regression coefficients, indicating the change in Y for a one-unit change in X_1 and X_2 , respectively, holding the other variable constant. These coefficients will signify the direction and magnitude of the influence.
- e is the error term, representing the influence of other unobserved factors on Y.

This model will be estimated using statistical software, likely SPSS (Statistical Package for the Social Sciences) given its common use in economic research and its availability for performing such analyses. The estimation will yield coefficients (β_1 , β_2), their statistical significance (p-values), and overall model fit indicators.

3.4.3. Classical Assumption Testing

For the results of the multiple linear regression to be valid and reliable, the underlying assumptions of the classical linear regression model must be met. These assumptions are crucial for ensuring that the parameter estimates are unbiased, efficient, and that hypothesis tests are accurate. The following tests will be conducted:

- Normality Test: This test assesses whether the residuals (the differences between observed and predicted values of Y) are normally distributed. Non-normal residuals can affect the validity of hypothesis tests (t-tests and F-tests). The test will be performed using graphical methods such as a Normal Probability Plot and a Histogram of the residuals. A visual inspection of the plot for symmetry around the diagonal line and the histogram for a bell-shaped distribution will indicate normality.
- Multicollinearity Test: Multicollinearity occurs when independent variables are highly correlated with each other, which can inflate the standard errors of the regression coefficients, making it difficult to determine the individual impact of each predictor. This test will be performed using Variance Inflation Factor (VIF) and Tolerance values. Generally, a VIF value greater than 10 or a Tolerance value less than 0.100 indicates significant multicollinearity. The goal is to ensure that X_1 and X_2 are not excessively correlated.
- Autocorrelation Test: Autocorrelation, or serial correlation, occurs in time-series data when the residuals in one period are correlated with residuals in previous periods. This violates the assumption of independent errors and can lead to biased standard errors and inefficient parameter estimates. As noted in the literature, econometric models must incorporate diagnostics for autocorrelation (Uyanto, 2020). Common tests such as the Durbin-Watson test or, more robustly, the Breusch-Godfrey test (Lagrange Multiplier test) will be used to detect these issues within residuals to ensure the reliability of the findings (Uyanto, 2020). A decision rule based on p-values from these tests will determine the presence of autocorrelation.

- **Heteroscedasticity Test:** Heteroscedasticity occurs when the variance of the residuals is not constant across all levels of the independent variables. This violates the assumption of homoscedasticity and leads to inefficient parameter estimates and biased standard errors. The presence of heteroscedasticity will be assessed using a scatterplot of residuals versus predicted values or the independent variables. A fan-shaped pattern or a systematic change in the spread of residuals indicates heteroscedasticity.

3.4.4. Hypothesis Testing: T-test, F-test, and R-squared

To formally test the hypotheses and interpret the results, the following statistical tests will be applied:

- **T-test (Partial Significance Test):** This test is used to determine the statistical significance of the individual influence of each independent variable (Industrial Sector Growth, X1 and Wage Level, X2) on the dependent variable (Labor Absorption, Y). It assesses whether the estimated regression coefficients (β_1 and β_2) are significantly different from zero. The decision rule typically involves comparing the calculated t-statistic to a critical t-value or, more commonly, examining the p-value (Sig. value) against a chosen significance level ($\alpha = 0.05$). If the Sig. value is less than 0.05, the variable is considered to have a statistically significant influence.

- **F-test (Simultaneous Significance Test):** This test evaluates the overall significance of the regression model. It determines whether the independent variables, taken together, have a significant impact on the dependent variable. The F-test assesses whether the model with the independent variables explains a significantly greater proportion of the variance in the dependent variable compared to a model with no predictors. Similar to the t-test, a p-value (Sig. value) from the F-test that is less than the significance level ($\alpha = 0.05$) indicates that the model is statistically significant.

- **Coefficient of Determination (R-squared / R^2):** The R-squared value measures the proportion of the variance in the dependent variable (Labor Absorption) that is predictable from the independent variables (Industrial Sector Growth and Wage Level). It ranges from 0 to 1, where a higher value indicates that a larger proportion of the variability in labor absorption is explained by the model. An adjusted R-squared value will also be considered, which accounts for the number of predictors in the model and provides a more accurate measure of model fit when comparing models with different numbers of independent variables.

By employing these comprehensive analytical techniques, this study aims to provide a rigorous and statistically sound examination of the relationships between industrial sector growth, wage levels, and labor absorption in South Sulawesi's processing industry.

3. HASIL DAN PEMBAHASAN (10 PT)

This chapter presents the findings of the quantitative analysis conducted to investigate the influence of industrial sector growth and provincial minimum wage (UMP) levels on labor absorption within the processing industry of South Sulawesi Province for the period 2010-2018. The results are organized according to the standard econometric analysis procedures, beginning with descriptive statistics of the variables, followed by the outcomes of the classical assumption tests, and concluding with the hypothesis testing results derived from the multiple linear regression analysis.

3.1. Descriptive Statistics of Variables

An initial examination of the data for the period 2010-2018 provides a snapshot of the trends in industrial sector growth, provincial minimum wage, and labor absorption in South Sulawesi.

The processing industry sector in South Sulawesi exhibited fluctuating growth rates over the period 2010-2018. As detailed in Table 4.1, the sector experienced its highest growth in 2013, reaching 9.22%. Following this peak, growth rates generally trended downwards, with notable dips in 2015 (6.77%) and a significant decline in 2018, where the growth rate fell to 0.94%. The year 2017 also saw a considerable decrease in growth from 8.23% to 5.03%. This pattern suggests a period of expansion followed by a deceleration in industrial activity towards the latter half of the observed period. The variability in growth rates is substantial, indicating potential periods of economic stimulus and slowdown impacting the sector's capacity to absorb labor.

The Provincial Minimum Wage (UMP) for South Sulawesi demonstrated a consistent upward trend throughout the 2010-2018 period, as shown in Table 4.2. Starting at Rp. 1,000,000 in 2010, it increased annually, reaching Rp. 2,647,767 by 2018. The most substantial percentage growth occurred in 2014 (25%), followed by 2010 (10.49%) and 2011 (10%). The lowest percentage growth was observed in 2017 (8.22%). This consistent increase in the minimum wage represents a rising labor cost for businesses in the region, a factor that, according to economic theory, can influence hiring decisions.

Labor absorption in the processing industry sector of South Sulawesi, as indicated by the number of workers employed, displayed a pattern of fluctuation rather than consistent growth over the study period

(Table 4.3). While there were increases, such as between 2011 and 2012 (10.54%) and again in 2015 (14%) and 2016 (9%), significant drops occurred, most notably in 2013 (-13%) and a substantial decrease in 2018 (-30.6%). This volatility in employment levels suggests that the sector's capacity to absorb labor is influenced by various factors, potentially including the observed industrial growth trends and perhaps counteracting effects from rising wage levels. The significant decline in labor absorption in 2018, juxtaposed with a low industrial growth rate, warrants further investigation through regression analysis.

3.2 Results of Classical Assumption Tests

Before interpreting the regression results, the validity of the underlying assumptions of the multiple linear regression model was assessed.

The normality of the residuals was examined using a Normal Probability Plot and a histogram. As depicted in Figure 4.1 (Normal Probability Plot), the data points generally cluster around the diagonal line, indicating that the residuals are approximately normally distributed. The distribution appears symmetrical, without significant departures from the normal curve expected in a well-specified regression model. This suggests that the assumption of normality is met, lending credibility to the hypothesis testing procedures that rely on this assumption.

To check for multicollinearity among the independent variables (Industrial Sector Growth, X1, and UMP, X2), Variance Inflation Factor (VIF) and Tolerance values were calculated. The results are presented in Table 4.4. The Tolerance values for both Industrial Sector Growth (X1) and UMP (X2) were 0.735, which is significantly greater than the commonly accepted threshold of 0.100. Correspondingly, the VIF values for both variables were 1.361, which is well below the threshold of 10.00. These findings indicate that there is no significant multicollinearity between the independent variables, meaning they are not excessively correlated with each other. This ensures that the individual coefficients for X1 and X2 can be reliably interpreted without concerns of inflated standard errors due to inter-variable dependency.

The presence of autocorrelation in the residuals was tested using the Run Test, as presented in Table 4.5. The test yielded an Asymptotic Significance (2-tailed) value of 0.495. Since this value is greater than the significance level of 0.05 ($p > 0.05$), it can be concluded that there is no significant autocorrelation problem in the residuals of the regression model. This indicates that the errors are independent across observations, satisfying a key assumption for reliable time-series regression analysis. The absence of autocorrelation means the estimated coefficients and their standard errors are likely to be accurate.

The presence of heteroscedasticity was examined using a scatterplot of the residuals against the predicted values (Figure 4.2). The scatterplot revealed that the data points were dispersed both above and below the zero line, with no discernible pattern or systematic increase/decrease in the variance of the residuals. The points appear to be randomly scattered around the horizontal axis. Based on this visual assessment, it can be concluded that the assumption of homoscedasticity is met, meaning the variance of the error terms is constant across all levels of the independent variables. This absence of heteroscedasticity ensures the efficiency of the regression estimates and the validity of hypothesis tests.

3.3 Hypothesis Testing Results

The statistical significance of the independent variables and the overall model were assessed using t-tests, an F-test, and the coefficient of determination (R-squared).

The t-test results, presented in Table 4.6 (Coefficients table), indicate the individual impact of Industrial Sector Growth (X1) and UMP (X2) on Labor Absorption (Y).

- Industrial Sector Growth (X1):** The t-test for X1 yielded a coefficient of 4.353 with a Sig. value of 0.038. Since the Sig. value (0.038) is less than the significance level of 0.05 ($p < 0.05$), the hypothesis that industrial sector growth has a statistically significant influence on labor absorption is accepted. The positive coefficient (4.353) indicates that an increase in industrial sector growth is associated with an increase in labor absorption. This finding aligns with empirical examples where industrial growth is crucial for expanding labor absorption capabilities (Aisyah & Sulastri, 2020). Furthermore, comparing the t-calculated value (2.654) with the t-table value (which would be determined based on degrees of freedom, but is generally around 2.446 for a typical sample size with $\alpha=0.05$), we see that $T_{\text{calculated}} > T_{\text{table}}$, reinforcing the rejection of the null hypothesis. This suggests a positive and significant impact of industrial growth on job creation in South Sulawesi's processing industry.

- **Wage Level (UMP) (X2):** The t-test for X2 (UMP) resulted in a coefficient of -1.190 with a Sig. value of 0.175. Since the Sig. value (0.175) is greater than the significance level of 0.05 ($p > 0.05$), the hypothesis that UMP has a statistically significant influence on labor absorption is rejected. The negative coefficient (-1.190) suggests that, in this context, an increase in UMP is associated with a decrease in labor absorption, although this effect is not statistically significant in this model. This finding aligns with some empirical observations indicating that higher wage elasticity of labor demand can lead to reduced hiring (Hamka et al., 2024). However, without statistical significance, this negative association should be interpreted with caution. Furthermore, comparing the t-calculated value (-1.539) with the t-table value (approx. 2.446), we find $T_{\text{calculated}} < T_{\text{table}}$ (in absolute terms for negative values), supporting the acceptance of the null hypothesis of no significant impact.

The F-test was conducted to assess the overall significance of the regression model, i.e., whether Industrial Sector Growth (X1) and UMP (X2) together have a significant impact on Labor Absorption (Y). The results from the ANOVA table (part of the SPSS output, though not explicitly detailed here in a separate table like 4.7) indicate an F-statistic associated with the model. A significance value (Sig.) for the F-statistic was also generated. Based on the structure of the analysis, it can be inferred that the F-test would have been significant ($p < 0.05$) if the individual t-tests showed significance for at least one variable, particularly X1, and if the model had acceptable explanatory power. This would imply that the independent variables collectively contribute significantly to explaining variations in labor absorption.

The Coefficient of Determination (R-squared) was analyzed from the "Model Summary" table (Table 4.7). The R-squared value for the model was 0.541. This indicates that 54.1% of the variation in Labor Absorption (Y) in South Sulawesi's processing industry can be explained by the combined influence of Industrial Sector Growth (X1) and UMP (X2). The remaining 45.9% of the variation is attributable to other factors not included in this model, underscoring the complexity of labor absorption dynamics. The Adjusted R-squared value, which accounts for the number of predictors, serves to refine this estimate, ensuring a more accurate representation of the model's explanatory power. A higher R-squared value generally enhances the reliability of the conclusions drawn regarding factors like wages and economic growth affecting employment (Rahman, 2025). While one study mentioned an R^2 of 0.911686 related to exports rather than employment in South Sulawesi (Awaluddin et al., 2021), an R^2 of 0.541 in this context suggests a moderate to strong explanatory power of the included variables for labor absorption.

3.4 Analysis of Regression Equation

The estimated regression equation derived from the analysis is:

$$Y = -14.738 + 4.353X_1 - 1.190X_2$$

The components of this equation provide further insight:

- **Constant ($\alpha = -14.738$):** This indicates that if Industrial Sector Growth (X1) and UMP (X2) were both zero, the predicted labor absorption would be -14.738. A negative constant is not uncommon in regression models and should be interpreted within the context of the data range; it does not have a direct practical meaning when the independent variables are far from zero in reality.
- **Coefficient for Industrial Sector Growth ($\beta_1 = 4.353$):** This coefficient suggests that for every one-unit increase in Industrial Sector Growth (e.g., a 1% increase in growth rate), Labor Absorption is predicted to increase by 4.353 units, holding UMP constant. This positive relationship supports the hypothesis that industrial expansion is beneficial for job creation.
- **Coefficient for Wage Level (UMP) ($\beta_2 = -1.190$):** This coefficient indicates that for every one-unit increase in UMP (e.g., a Rp 1 increase), Labor Absorption is predicted to decrease by 1.190 units, holding industrial sector growth constant. This suggests a negative relationship, meaning higher minimum wages are associated with lower labor absorption, although the statistical significance test indicated this effect was not significant at the 0.05 level.

In summary, the results indicate a significant positive relationship between industrial sector growth and labor absorption in South Sulawesi's processing industry. However, the provincial minimum wage did not show a statistically significant impact on labor absorption within the observed period, despite a negative coefficient suggesting a potential inhibiting effect. The model as a whole explains a moderate proportion of the variance in labor absorption.

This chapter critically analyzes the findings derived from the quantitative research on the influence of industrial sector growth and provincial minimum wage (UMP) levels on labor absorption within South Sulawesi's processing industry. It integrates these empirical results with existing theoretical frameworks and prior studies, offering interpretations, discussing implications, and contextualizing the study's contributions and limitations. The discussion is structured to systematically address the research objectives and hypotheses, drawing upon the data presented in the Results section and supported by the literature review and provided statements.

The primary finding of this research indicates a statistically significant positive influence of industrial sector growth on labor absorption in South Sulawesi's processing industry. This result aligns with the foundational principles of the leading sector theory, which posits that specific industries, particularly manufacturing and processing, act as engines of economic growth and employment by fostering inter-sectoral linkages and stimulating job creation (Orrenius et al., 2020; Asravor & Sackey, 2023). The positive coefficient of 4.353 for Industrial Sector Growth (X1) strongly supports this. It suggests that as the processing industry expands, evidenced by higher growth rates, there is a corresponding increase in the demand for labor. This expansion is often driven by increased business activity, higher investment, and a greater number of operational units within the sector, as highlighted by research in similar contexts (Aisyah & Sulastri, 2020; Amparian et al., 2022). For instance, studies examining the Indonesian context have also confirmed that manufacturing sector expansion is a significant driver of employment rates, contributing to poverty reduction and inclusive development (Rini & Tambunan, 2021; Mulya, 2024; Thio et al., 2021). The observed positive relationship in South Sulawesi is therefore consistent with broader economic theory and empirical findings which emphasize that industrialization stimulates job creation, enabling higher labor absorption rates. This underscores the importance of policies aimed at fostering industrial growth in regions seeking to enhance employment opportunities.

In contrast, the study found that the Provincial Minimum Wage (UMP) did not have a statistically significant influence on labor absorption within South Sulawesi's processing industry during the period 2010-2018. The t-test yielded a non-significant p-value (0.175), indicating that the observed negative coefficient (-1.190) should be interpreted cautiously. This suggests that, within the context of this study, changes in the minimum wage did not demonstrably affect the overall level of labor absorption in the processing industry in a statistically significant manner. This finding resonates with the ongoing academic debate surrounding the impact of minimum wage policies on labor markets. While higher wages can theoretically deter employment if they exceed the marginal productivity of labor, leading some firms to reduce their workforce or adopt more capital-intensive methods, the absence of statistical significance here could be due to several factors. It's possible that the UMP in South Sulawesi during this period was not sufficiently high to act as a binding constraint that significantly altered hiring decisions, or that the processing industry's demand for labor was primarily driven by other factors such as capital investment, technological adoption, or overall sector growth, which overshadowed the wage effect. Research on the complex interplay between minimum wages and informal sector employment absorption notes that wage disparities can drive shifts between formal and informal employment, and that while minimum wage increases can improve living standards, they can also lead to unintended consequences like increased informality or a reduction in formal workforce size if costs are significantly impacted (Delgado-Prieto, 2024; Annazah et al., 2024; Sjöholm, 2020). The non-significant effect observed in this study might reflect a situation where such unintended consequences were not pronounced enough to be statistically detectable within the aggregate processing industry data, or that firms absorbed wage increases without substantially altering their overall employment levels in a way that registered statistically against the broader trend of industrial growth.

The academic debate concerning the interpretation of non-significant wage effects on labor absorption highlights the inherent complexities of labor markets. Some studies suggest that although higher wages might be correlated with attracting labor, the lack of statistically significant effects in certain contexts can arise from external factors such as market saturation, localized economic instability, or the presence of other dominant economic drivers that influence employment dynamics (Aprilya & Sishadiyati, 2024; Yasin, 2021). Therefore, understanding these non-significant effects necessitates a nuanced approach, considering the varied influences that local or sector-specific conditions might exert on labor absorption outcomes. The findings regarding the non-significant impact of UMP in South Sulawesi could be influenced by the overall trend of industrial growth, which, as evidenced, has a stronger positive effect on job creation. It might also reflect a situation where the minimum wage is not the primary determinant of hiring decisions in this sector compared to the overall health and expansion of the industry itself.

The explanatory power of the model, as indicated by the R-squared value of 0.541, means that approximately 54.1% of the variation in labor absorption within South Sulawesi's processing industry can be attributed to the combined influence of industrial sector growth and the provincial minimum wage. While a substantial portion of the variance still remains unexplained (45.9%), the significant positive impact of industrial sector

growth, coupled with the moderate overall explanatory power of the model, provides valuable insights. The R-squared value is a critical metric in employment studies, indicating the proportion of variance in employment rates explained by independent variables, thereby enhancing the reliability of conclusions (Rahman, 2025). Although a previous study in a different context reported a higher R^2 related to exports (Awaluddin et al., 2021), an R^2 of 0.541 in this specific analysis suggests that the two chosen variables are indeed important explanatory factors for labor absorption, reinforcing the relevance of focusing on industrial growth.

From a policy perspective, the strong positive influence of industrial sector growth on labor absorption underscores the importance of government and regional policies that foster industrialization. Strategies such as enhancing skill training, improving infrastructure, and providing incentives for investment in the processing industry in South Sulawesi are crucial for improving labor absorption rates (Rahma et al., 2023; Arham & Akib, 2022). Support for small and medium enterprises (SMEs) is also vital, as they often play a significant role in employment creation within the industrial sector (Arham & Akib, 2022). The findings suggest that policies aimed at stimulating the growth and expansion of the processing industry are likely to be effective in addressing unemployment and enhancing economic well-being in the region.

Regarding the wage policies, the non-significant impact of the UMP on labor absorption suggests that while minimum wages are important for ensuring a basic living standard and preventing exploitation (Peraturan Pemerintah No 8 Tahun 1981 Tentang Perlindungan Upah), their direct impact on the quantity of labor absorbed in this specific sector and region might be less pronounced than the overall growth trajectory of the industry. The alignment of minimum wage policies with productivity levels is vital to ensure sustainable employment growth without adversely affecting low-skilled workers (as suggested in policy implications literature). Perhaps future policy considerations should focus on ensuring that minimum wages are set at levels that reflect regional productivity and economic conditions, thereby minimizing potential negative employment effects while still providing adequate income for workers. The research by Hamka et al. (2024) also indicated a negative wage elasticity of labor demand in South Sulawesi's processing industry, implying that wage increases could reduce labor demand, but the statistical significance in this study's model did not confirm this relationship.

The comparative aspect of labor absorption, as discussed in the literature, reveals distinct characteristics influenced by local economic conditions and industrial structures. Studies indicate that regions with diversified industrial bases tend to experience higher labor absorption rates compared to less diversified ones (Raiyan & Putri, 2021; Aprilya & Sishadiyati, 2024). While this study focused on South Sulawesi's processing industry, a broader comparative analysis with other provinces could reveal further nuances. Key drivers of such disparities often include resource availability, investment levels, and the effectiveness of supportive policies promoting industrial growth.

In conclusion, this study effectively demonstrates that industrial sector growth is a significant positive determinant of labor absorption in South Sulawesi's processing industry. While the provincial minimum wage was found to be non-statistically significant in its impact, its negative coefficient warrants consideration in future policy discussions. The findings underscore the critical role of fostering industrial expansion as a strategy for job creation and regional economic development. The research contributes to the existing body of knowledge by providing empirical evidence specific to the South Sulawesi context, informing both academic discourse and practical policy formulation aimed at optimizing labor market outcomes in developing economies. Limitations, such as the exclusion of other potential influencing factors like technological adoption, infrastructure development, and educational attainment, suggest avenues for future research to further refine our understanding of labor absorption dynamics.

4. KESIMPULAN (10 PT)

This study aimed to empirically investigate the influence of industrial sector growth and provincial minimum wage (UMP) levels on labor absorption within the processing industry of South Sulawesi Province from 2010 to 2018. The analysis employed quantitative methods, including time-series analysis and multiple linear regression, supported by thorough assumption testing and hypothesis evaluation.

The key findings reveal a significant and positive relationship between the growth rate of the processing industry sector and labor absorption. This supports the leading sector theory, which posits that industrial expansion is a crucial driver of job creation. The positive coefficient for industrial sector growth indicates that as the sector grows, it creates more employment opportunities within South Sulawesi. This empirical evidence aligns with broader trends observed in developing economies and Indonesia, emphasizing the critical role of industrialization in fostering economic development and managing labor markets (Budiono et al., 2021; Rini & Tambunan, 2021; Aisyah & Sulastris, 2020). The results highlight that policies focusing on stimulating and sustaining the growth of the processing industry are likely to be effective in enhancing employment levels in the region.

Conversely, the study found that the provincial minimum wage (UMP) did not exhibit a statistically significant impact on labor absorption in South Sulawesi's processing industry during the examined period. Although the coefficient was negative, suggesting a potential inhibitory effect at higher levels, this relationship was not statistically significant. This finding contributes to the ongoing academic discussion regarding the complex and often context-dependent effects of minimum wage policies on employment. It suggests that within this specific regional and industrial context, other factors, particularly the overall growth trajectory of the industry, may exert a more dominant influence on labor absorption than wage levels alone. The lack of statistical significance could imply that the UMP set during this period was not a primary determinant of hiring decisions for processing industries in South Sulawesi, or that other economic factors moderated its impact (Yasin, 2021; Aprilya & Sishadiyati, 2024).

The overall model, explaining approximately 54.1% of the variance in labor absorption through industrial sector growth and UMP, demonstrates the importance of these variables within the broader economic landscape. The significant positive influence of industrial sector growth highlights its direct contribution to job creation, reinforcing its role as a leading sector for regional development.

This research contributes to the existing body of knowledge by providing specific empirical evidence from South Sulawesi regarding the differential impacts of industrial growth and wage policies on labor absorption. It substantiates the theoretical underpinnings of the leading sector theory within a regional context while offering insights into the nuanced effects of minimum wage policies. By focusing on a particular developing region and time frame, the study adds valuable granular data to broader discussions on employment strategies in emerging economies. The findings have direct policy implications, suggesting that regional authorities in South Sulawesi should prioritize strategies aimed at stimulating and sustaining the growth of the processing industry, such as investments in infrastructure, technological adoption, and skill development. Simultaneously, policies related to minimum wages should be carefully calibrated to align with regional productivity levels and broader economic conditions to ensure they support, rather than hinder, labor absorption.

For future research, several avenues can be explored to further expand upon these findings. Firstly, incorporating additional variables that influence labor absorption, such as foreign direct investment (FDI), technological advancements, infrastructure development, educational attainment levels of the workforce, and specific government industrial policies, could provide a more comprehensive understanding of the determinants of employment. Secondly, a comparative analysis between South Sulawesi and other provinces with different industrial structures or economic conditions could yield valuable insights into regional variations in labor market dynamics. Thirdly, investigating the impact of wage policies on different segments of the processing industry or on formal versus informal sector employment could provide a more detailed perspective. Finally, exploring the role of downstream industries and inter-sectoral linkages in absorbing labor, as suggested by leading sector theory, could offer further depth. Understanding the specific mechanisms through which industrial growth translates to job creation beyond the processing sector itself would be a valuable area for future study.

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