



Skill Mismatch and Local Labor Absorption in The Context of Industrialization: Evidence from Subang Regency, Indonesia

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Abstract - This study aims to analyze skill mismatch and local labor absorption in the context of industrialization in Subang Regency. The main issue addressed is the suboptimal absorption of local labor despite increasing investment and industrial sector development. This study employs a qualitative approach using a descriptive-analytical method and utilizes secondary data from the Central Bureau of Statistics, international institutional reports, and relevant academic literature. The findings indicate a significant skill mismatch between local workers and industrial demands. High unemployment, particularly among youth, is influenced by the mismatch between graduates' competencies and labor market requirements, as well as weak school-to-work transition processes. In addition, industrialization in Subang exhibits characteristics of jobless growth, where economic expansion is not accompanied by proportional employment absorption. This study highlights that the success of industrialization depends on the quality of local human resources. Therefore, integrated policy interventions are required, including strengthening industry-based vocational training, improving the alignment between education and the labor market, and enhancing access to labor market information.

Keywords: Skill mismatch; labor absorption; industrialization; youth unemployment; Subang Regency

I. INTRODUCTION

Industrialization is widely recognized as a key driver of regional economic growth and structural transformation. In many developing regions, including Indonesia, industrial expansion is expected to generate employment opportunities and improve the welfare of local communities (World Bank, 2019). However, the relationship between industrial growth and labor absorption is not always linear. In several cases, rapid industrial development is not accompanied by proportional increases in employment, leading to what is often referred to as jobless growth (Rodrik, 2016).

Subang Regency, located in West Java Province, has emerged as one of the strategic areas for industrial development in recent years. The establishment of industrial zones and the influx of investment have significantly transformed the region's economic landscape. Despite these developments, the absorption of local labor remains suboptimal. A considerable portion of the workforce, particularly among young individuals, continues to face difficulties in accessing employment opportunities within the industrial sector (Badan Pusat Statistik, 2025).

One of the key factors contributing to this issue is the presence of skill mismatch, which refers to the discrepancy between the competencies possessed by the workforce and the skills required by employers (McGuinness, Pouliakas, & Redmond, 2018). This mismatch often results in a situation where available jobs cannot be filled by local workers, while unemployment persists simultaneously (Cappelli, 2015). In the context of Subang, this condition is further exacerbated by the relatively low level of educational attainment and limited access to industry-relevant training.

In addition, the transition process from education to employment remains weak, particularly for young job seekers aged 15–24 years. This group tends to experience higher unemployment rates due to limited work experience, inadequate technical skills, and insufficient exposure to labor market information (International Labour Organization, 2022). As a result, they face structural barriers in entering the workforce, even in regions experiencing industrial growth.

Given these conditions, it is important to examine the dynamics between industrialization, skill mismatch, and labor

absorption more closely. This study aims to analyze the extent to which skill mismatch affects the absorption of local labor in Subang Regency and to identify key challenges in aligning workforce competencies with industrial needs. The findings of this research are expected to contribute to policy formulation, particularly in strengthening vocational education, improving the link and match between education and industry, and enhancing the effectiveness of labor market interventions.

II. RESEARCH METHOD

This study employs a qualitative approach using a descriptive-analytical method to examine the phenomenon of skill mismatch and its impact on local labor absorption in Subang Regency. The qualitative approach is considered appropriate as it allows for an in-depth understanding of structural issues in the labor market, particularly those related to the alignment between workforce competencies and industrial needs (Creswell, 2014).

The data used in this study are secondary data obtained from credible sources, including the Central Bureau of Statistics (Badan Pusat Statistik), international institutional reports such as the International Labour Organization (ILO) and the World Bank, as well as relevant academic literature. Statistical data, particularly those related to unemployment rates, labor force characteristics, and employment structure, are used to support the analysis (Badan Pusat Statistik, 2025).

Data collection was conducted through documentation techniques by reviewing official reports, statistical publications, and previous research findings. This method enables the researcher to systematically gather relevant information to understand the dynamics of labor market conditions in the context of regional industrialization.

The data analysis technique used in this study is descriptive-analytical analysis. This involves organizing, interpreting, and synthesizing data to identify patterns of skill mismatch and their implications for labor absorption. The analysis is carried out by linking empirical findings with relevant theoretical frameworks, particularly those related to labor economics and human capital theory (Becker, 1993; McGuinness et al., 2018).

To ensure the validity of the findings, this study applies data triangulation by comparing information from various sources, including statistical data, institutional reports, and academic studies. This approach helps to strengthen the credibility and reliability of the analysis.

III. RESULT AND DISCUSSION

This section presents the empirical findings and analytical discussion of employment dynamics in Subang Regency within the context of industrialization. The analysis focuses on the structural characteristics of the labor market, particularly the condition of employment, unemployment patterns across age groups, the prevalence of skill mismatch, and the implications of industrial development for local labor absorption. By integrating statistical evidence with relevant theoretical perspectives, this section aims to provide a comprehensive understanding of the challenges in aligning workforce competencies with industrial demands.

A. Employment Conditions in Subang Regency

Employment conditions in Subang Regency reflect structural challenges in the labor market, particularly in the context of rapid industrialization. Despite the increasing development of industrial areas and investment inflows, the absorption of local labor has not yet reached an optimal level. This indicates a mismatch between labor supply and labor demand, which is a common issue in developing economies undergoing structural transformation (World Bank, 2019).

Based on data from the Central Bureau of Statistics (Badan Pusat Statistik), the labor force in Subang is characterized by a relatively high proportion of workers with low to medium educational attainment. This condition affects the overall quality of the workforce, particularly in terms of technical and vocational skills required by industrial sectors (Badan Pusat Statistik, 2025). As a result, many local workers are unable to meet the qualifications demanded by employers in manufacturing and industrial-based jobs.

In addition, the employment structure in Subang is still dominated by the informal sector, which tends to offer lower job security, limited income stability, and minimal access to social protection. This condition further reflects the limited capacity of the formal industrial sector to absorb local labor effectively. While industrialization is expected to shift employment from informal to formal sectors, such transformation has not fully occurred in Subang.

From a theoretical perspective, this condition can be explained through the concept of human capital, which emphasizes that the quality of labor, including education and skills, plays a crucial role in determining employability (Becker, 1993). When the workforce lacks the necessary competencies, the presence of industrial growth alone is insufficient to generate inclusive employment opportunities.

Furthermore, the imbalance between labor supply and industrial demand also indicates the presence of structural unemployment. This occurs when the characteristics of the labor force do not align with the needs of the labor market, resulting in persistent unemployment even in the presence of economic growth (McGuinness et al., 2018).

Overall, the employment condition in Subang Regency demonstrates that industrialization has not automatically translated into improved labor absorption. Instead, it highlights the importance of aligning workforce competencies with industrial requirements to ensure that economic growth is

accompanied by inclusive employment opportunities.

B. Unemployment by Age Group

Unemployment in Indonesia, including in Subang Regency, exhibits a clear disparity across age groups, with the highest rates consistently found among young individuals aged 15–24 years. This pattern reflects structural challenges in the labor market, particularly in the transition from education to employment. According to data from the Central Bureau of Statistics (Badan Pusat Statistik), youth unemployment remains significantly higher compared to other age groups, indicating that young workers face greater barriers in entering the labor market (Badan Pusat Statistik, 2025).

Table 1. Unemployment Rate by Age Group in Indonesia and West Java (February 2025)

Tabel 2. Tingkat Pengangguran Terbuka (TPT) Menurut Kelompok Umur di Indonesia dan Jawa Barat (Februari 2025)

Kelompok Umur (Tahun)	TPT Indonesia (%)		TPT Jawa Barat (%)	
	Februari 2024	Februari 2025	Februari 2024	Februari 2025
15–24	15,78	15,68	20,55	19,60
25–34	6,86	6,66	11,13	10,17
35–44	4,70	4,38	7,74	7,06
45–54	3,78	3,58	6,32	5,62
55–64	3,14	2,69	4,86	4,24
Total	4,82	4,76	7,46	6,94

Sumber: Badan Pusat Statistik (2025)

Based on Table 1, the 15–24 age group exhibits the highest unemployment rate compared to other age groups, both nationally and in West Java. Although the data are presented at the provincial level, this pattern provides an important contextual reference for understanding similar labor market challenges in Subang Regency.

This condition can be explained by several interrelated factors. First, young job seekers generally have limited work experience, which reduces their competitiveness in a labor market that increasingly demands practical and job-ready skills. Second, there is often a mismatch between the competencies acquired through formal education and the qualifications required by employers. As a result, many graduates are not immediately employable in industrial sectors that require specific technical skills.

From a theoretical perspective, this phenomenon is closely related to the concept of school-to-work transition, which emphasizes the importance of smooth and effective pathways from education to employment (International Labour Organization, 2022). In many developing regions, including Subang, this transition process remains weak due to limited vocational training, inadequate career guidance, and insufficient linkage between educational institutions and industry.

In addition, the high unemployment rate among youth also reflects the presence of structural unemployment, where the characteristics of the labor force do not align with labor market demands. This is further reinforced by the findings of McGuinness et al. (2018), who argue that skill mismatch is a major determinant of persistent unemployment, particularly among younger workers entering the labor market for the first time.

Another important aspect is the increasing demand for higher-level and specialized skills in industrial sectors. As industrialization progresses, firms tend to prioritize workers with specific competencies, technical expertise, and

adaptability. Consequently, individuals who lack these qualifications—particularly recent graduates with limited practical exposure—are more likely to remain unemployed despite the availability of job opportunities.

Overall, the dominance of youth unemployment highlights a critical structural issue in the labor market of Subang Regency. It indicates that industrial growth alone is insufficient to ensure inclusive employment unless it is supported by effective mechanisms that facilitate the transition of young workers into the labor market. Therefore, targeted interventions, such as strengthening vocational education, improving industry linkages, and expanding access to labor market information, are essential to reduce youth unemployment and enhance labor absorption.

C. Skill Mismatch and Labor Market Dynamics

Skill mismatch represents a central issue in understanding the limited absorption of local labor in Subang Regency. It refers to the discrepancy between the skills possessed by the workforce and those required by employers, which often leads to inefficiencies in the labor market (McGuinness, Pouliakas, & Redmond, 2018). In the context of industrialization, this mismatch becomes more pronounced as industries demand specific technical competencies and job-ready skills.

In Subang Regency, the presence of skill mismatch is closely associated with the structure of the local workforce, which is still dominated by individuals with low to medium educational attainment. This condition limits the ability of workers to meet the qualifications required by industrial sectors, particularly in manufacturing and technology-based industries. As a result, many job vacancies remain unfilled by local workers, while unemployment persists simultaneously (Cappelli, 2015).

From a conceptual perspective, skill mismatch can be categorized into vertical mismatch and horizontal mismatch. Vertical mismatch occurs when the level of education of workers does not correspond to job requirements, while horizontal mismatch refers to the misalignment between the field of study and the type of job performed. Both forms are evident in developing regions and contribute to labor market inefficiencies (OECD, 2015).

Furthermore, the persistence of skill mismatch indicates a weak linkage between the education system and the labor market. Educational institutions often fail to adapt curricula to the evolving needs of industries, resulting in graduates who lack relevant competencies. This issue is particularly critical in regions undergoing rapid industrialization, where the demand for skilled labor increases significantly.

In addition, limited access to vocational training and industry-based skill development programs further exacerbates the problem. Without adequate opportunities to upgrade their skills, local workers face difficulties in competing with more qualified labor from outside the region. Consequently, industrial growth does not necessarily translate into improved employment outcomes for the local population.

Overall, skill mismatch in Subang Regency reflects a structural problem that hinders the effectiveness of industrialization in generating inclusive employment. Addressing this issue requires a comprehensive approach that integrates education, training, and labor market policies to ensure better alignment between workforce competencies and industrial demands.

D. Industrialization, Local Labor Absorption, and Policy Implications

Industrialization in Subang Regency has brought significant economic transformation, particularly through increased investment and the development of industrial zones. In theory, such expansion should lead to greater employment opportunities and improved labor absorption. However, the findings of this study indicate that industrial growth in Subang has not been fully accompanied by proportional increases in local employment, reflecting the phenomenon of jobless growth (Rodrik, 2016).

This condition highlights a fundamental disconnect between industrial development and the characteristics of the local workforce. While industries demand highly specific skills, technical competencies, and work readiness, a substantial portion of the local labor force does not meet these requirements. As a result, companies often recruit workers from outside the region, thereby limiting the participation of local communities in the benefits of industrialization.

From a policy perspective, this issue underscores the importance of strengthening the alignment between education, training systems, and labor market demands. One of the key strategies is the development of industry-based vocational education and training programs that focus on practical skills and job readiness. Such programs can help bridge the gap between workforce competencies and industrial needs (International Labour Organization, 2021).

In addition, improving the link and match between educational institutions and industries is essential. This can be achieved through curriculum adjustments, internship programs, and collaborative partnerships that ensure graduates possess relevant and up-to-date skills. Strengthening this linkage not only enhances employability but also reduces the risk of skill mismatch in the long term.

Another important policy implication is the need to expand access to labor market information, particularly for young job seekers. Providing accurate and timely information about job opportunities, skill requirements, and career pathways can facilitate a smoother transition from education to employment. This is especially important in regions undergoing rapid industrialization, where labor market dynamics are constantly evolving.

Finally, local governments play a crucial role in designing and implementing integrated labor policies that prioritize local workforce development. This includes investment in training infrastructure, incentives for industries to hire local workers, and coordination among stakeholders to ensure inclusive economic growth.

Overall, the case of Subang Regency demonstrates that industrialization alone is insufficient to guarantee effective labor absorption. Without targeted and integrated policy interventions, the benefits of economic growth may not be evenly distributed. Therefore, aligning workforce development with industrial transformation is essential to achieving sustainable and inclusive employment outcomes.

IV. CONCLUSION

This study concludes that industrialization in Subang Regency has not yet been able to optimize the absorption of local labor. Despite the rapid growth of industrial sectors and increasing investment, employment opportunities for local workers remain limited due to structural constraints in the labor market.

The findings reveal that unemployment is predominantly concentrated among young individuals, indicating significant challenges in the transition from education to employment. This condition is further exacerbated by the presence of skill mismatch, where the competencies possessed by the workforce do not align with the requirements of the industrial sector. As a result, many local workers are unable to compete for available jobs, while industries tend to recruit labor from outside the region.

Moreover, the study identifies that industrialization in Subang exhibits characteristics of jobless growth, where economic expansion does not proportionally translate into increased employment. This highlights the importance of not only promoting industrial development but also ensuring the readiness and quality of the local workforce.

Therefore, this study emphasizes the need for integrated policy interventions to address these challenges. Key recommendations include strengthening industry-based vocational training, improving the alignment between education and labor market demands, and enhancing access to labor market information, particularly for young job seekers. These efforts are essential to ensure that industrialization leads to inclusive and sustainable employment outcomes.

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