Journal of Economics and Business (JECOMBI)
https://doi.org/10.58471/jecombi.v7i02
ESSN, 2746-8887(Online)
https://jecombi.seaninstitute.or.id/index.php/JECOMBI/issue/view/18

Extractive Economic Dependency and Skilled Labor Migration: Implications for Population Development in West Kalimantan

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Article Info

Keywords:
Structural transformation; Human capital; Skilled labor; Labor mobility; Population development

ABSTRACT

Population development is determined not only by population quality and size but also by the regional economy's capacity to provide productive avenues for utilizing human capital. This issue is particularly significant in West Kalimantan, where the employment structure remains dominated by the primary sector and informal work, while the growth of value-added sectors has not been matched by a sufficiently deep transformation of employment opportunities. This study aims to analyze the interrelationships among resource-based economic dependence, the transformation of employment structures, the utilization of skilled labor, labor mobility, and their implications for population development in West Kalimantan. The research employs a descriptive-analytical approach utilizing secondary data from BPS (Statistics Indonesia), government policy documents, and scholarly literature. The analysis integrates perspectives on structural transformation, human capital, skills mismatch, job quality, and the economics of migration, while the policy analysis applies Bardach's Eightfold Path framework. The findings indicate that the core issue is not merely the high reliance on resource-based sectors, but rather the lack of sufficient depth in economic transformation regarding the diversity, quality, and skill requirements of available jobs. As of February 2026, the agriculture, forestry, and fisheries sectors still absorbed 45.70% of the workforce, whereas manufacturing accounted for 6.68%, and informal workers constituted 58.51%. This situation reveals a gap between human capital development and the economic structure's capacity to optimally absorb and utilize that capital. While available data do not allow for direct verification of skills mismatch, overeducation, or brain drain, the limited job diversification and disparities in regional job attractiveness provide a basis for viewing skilled labor mobility as a mechanism for human capital distribution. These findings frame population development as a matter of the economic structure's transformative capacity to convert human capital into regional productive capacity. Therefore, policies need to be directed towards strengthening the link between education and industry needs, enhancing the quality and appeal of professional jobs, and fostering technology-based downstreaming and the strengthening of local value chains.

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INTRODUCTION

Population development cannot be understood solely as a matter of controlling population size and birth rates; rather, it encompasses the quality of human resources, population structure, distribution, mobility, and the capacity of a region to create a social and economic environment that enables the population to develop productively. From this perspective, population development is closely linked to economic transformation, as shifts in economic structure determine the types of jobs, productivity levels, skill requirements, and the regional distribution of economic opportunities. Conversely, improvements in human resource quality alter the characteristics of labor supply and increase the demand for jobs that align with education, competencies, career aspirations, and technological advancements. When changes in the quality of human capital outpace changes in the structure of employment opportunities, the resulting issue is no longer merely about the number of jobs available, but rather a mismatch between workforce characteristics and the economic capacity to provide suitable employment.

This relationship can be explained through the perspective of structural transformation, which views development as a process of shifting the composition of economic activities and the workforce from sectors with relatively low productivity toward those characterized by higher productivity, value-added, and technological complexity (Lewis, 1954; Kuznets, 1973). Thus, structural transformation is measured not only by changes in sectoral contributions to the Gross Regional Domestic Product (GRDP) but also by the economy's capacity to generate an increasingly diverse and productive employment structure. From this perspective, the dominance of resource-based sectors does not inherently signify a failure of development. The primary sector can serve as a foundation for growth if it fosters downstream processing, industrial linkages, productivity gains, and the creation of high value added jobs. Issues arise, however, when resource-based economic activities generate substantial economic value without being accompanied by a diversification of employment opportunities or an increased demand for a more highly skilled workforce.

This situation reflects the economic and labor market structure of West Kalimantan. Labor data from February 2026 indicates that the agriculture, forestry, and fisheries sector remains the largest employer, whereas manufacturing absorbs a relatively limited workforce and informal employment accounts for a significant share (BPS West Kalimantan Province, 2026). During the same period, the open unemployment rate stood at 4.57%, while the agriculture, forestry, and fisheries sector absorbed approximately 45.70% of the workforce and the manufacturing industry about 6.68% (BPS West Kalimantan Province, 2026). This structure reveals that West Kalimantan's labor challenges lie not merely in the unemployment rate, but in sectoral composition, job quality, and the modern sector's capacity to absorb a workforce with increasingly higher levels of education and skills.

When suitable, high quality job opportunities are limited, labor mobility serves as a mechanism for adjusting to regional disparities in opportunities. From the perspective of the economics of migration, labor movement can be understood as an investment decision in which individuals weigh mobility costs against expected economic opportunities in the destination region (Sjaastad, 1962). Harris and Todaro (1970) also highlight the importance

of disparities in expected income and employment prospects in explaining migration decisions. For the educated workforce, these considerations involve not only income levels but also the likelihood of securing employment that matches their competencies, access to broader labor markets, and prospects for career development. Consequently, limitations in the local job structure may drive the educated workforce to seek higher returns on their human capital in other regions.

While numerous studies have addressed skills mismatches, overeducation, job quality, skilled labor migration, and population development, the interrelationships among these elements tend to be examined in isolation. Literature on skills mismatches primarily focuses on the links between education, skills, and job requirements (Leuven & Oosterbeek, 2011; McGuinness et al., 2018). Studies on skilled labor migration largely explain the economic, social, and psychological factors influencing mobility (Lee et al., 2024), whereas research on population development focuses more on the dynamics of population size, structure, distribution, and planning needs (Mu'awwanah & Illah, 2022; Artisa, 2018; Alfassa, 2022). An area requiring further analysis is the interconnection between a resource based economic structure, the quality and suitability of employment opportunities, the mobility of educated workers, and the distribution of human capital within the perspective of regional population development.

Based on this overarching framework, this study aims to analyze the interrelationships among resource-based economic dependence, the structure and quality of employment opportunities, and the mobility of the educated workforce, as well as their implications for population development in West Kalimantan. The analysis focuses on three key issues: 1. how the regional economic structure shapes the capacity and suitability of job opportunities for the educated workforce; 2. how limitations or mismatches regarding these opportunities influence workforce mobility decisions; and 3. how such mobility impacts the distribution of human capital and the capacity for population development in West Kalimantan. Subsequently, these findings serve as the basis for evaluating policy alternatives using the Bardach framework, ensuring that the resulting recommendations are not merely reactive to the phenomenon of brain drain but instead address the underlying structural issues within the economy and labor market.

LITERATURE REVIEW AND PROBLEM STATEMENT

Extractive Economic Dependence and Structural Transformation

In this study, reliance on an extractive economy is understood as a condition where regional economic activity depends heavily on the utilization and exploitation of natural resources as the basis for production and economic value creation, while the process of diversifying into higher value-added activities remains underdeveloped. This distinction is crucial because the mere presence of a natural resource sector does not inherently constitute a development problem. The issue arises when extractive activities fail to evolve into a foundation for downstream processing, industrial linkages, the strengthening of local value chains, and the creation of jobs that are increasingly productive and require higher levels of competence. The perspective of structural transformation provides a framework for understanding this

issue. Lewis (1954) explains development through the shift of resources and labor from traditional, low-productivity activities to those with higher productivity, whereas Kuznets (1973) identifies changes in the structure of production and employment as a vital component of the economic development process. In a contemporary context, structural transformation is assessed not merely by the inter-sectoral movement of labor, but also by a region's capacity to enhance productivity, expand value-added activities, and create an increasingly diverse employment structure.

Skills Mismatch and Human Capital Utilization

Literature on skills mismatch provides a basis for understanding this issue. McGuinness et al. (2018) explain that skills mismatch occurs when workers' skills do not align with job requirements, while Leuven and Oosterbeek (2011) demonstrate that overeducation is a form of mismatch where a worker's education level exceeds the demands of the job they perform. The conceptual implication is that labor absorption is not synonymous with the optimal utilization of human capital. An individual may be employed but hold a position that does not fully utilize their competencies. Under such conditions, low unemployment does not necessarily indicate that the labor market is functioning optimally. Analysis must examine whether the job structure provides scope for the application of competencies, productivity enhancement, and career development.

Job Quality and Skilled Labor Mobility

For skilled workers, job quality encompasses more than just income levels. Alignment with one's field of work, employment stability, opportunities for skill enhancement, the professional environment, career progression, and income prospects all constitute part of the returns individuals consider. Consequently, a region may possess a substantial number of jobs yet still struggle to retain skilled workers if its employment structure fails to offer appropriate quality and prospects. This relationship alters the understanding of labor mobility. Migration is not always a response to a lack of employment; it can also be a reaction to disparities in job quality and opportunity structures between the region of origin and the destination region. Sjaastad (1962) viewed migration as a form of investment, wherein individuals weigh relocation costs against expected economic benefits. Subsequently, Harris and Todaro (1970) emphasized the roles of expected income and employment prospects in migration decisions.

Skilled Labor Mobility and Brain Drain

Therefore, this study employs the term "skilled labor mobility" as its primary concept and treats "brain drain" as a potential consequence requiring empirical assessment. This stance is crucial to avoid adopting brain drain as a preconceived assumption, as labor mobility does not automatically imply a permanent loss of human capital for the region of origin. From the perspective of migration economics, the decision to relocate is part of a human resource allocation process that weighs the costs and benefits of movement; thus,

mobility should be understood as an element of the dynamics of inter-regional human capital distribution (Sjaastad, 1962).

Population Development and Human Capital

Research Gap and Contribution

However, these four perspectives tend to be studied in isolation. Research on resource-based economies generally focuses on production structures, sectoral contributions, and value added. Labor studies emphasize unemployment, skills mismatches, or job quality. Migration studies focus on push and pull factors, whereas population development research primarily addresses the dynamics of population size, structure, distribution, and mobility. The analytical gap addressed by this research lies in the lack of integration among extractive economic dependence, the structure and quality of employment opportunities, skilled labor mobility, and human capital distribution within the framework of regional population development. Addressing this gap is crucial because regional economic structures determine not only the scale of economic activity but also the types and quality of jobs available to residents with varying levels of education and competence.

METHODS

This study employs a descriptive-analytical approach with a policy analysis perspective to examine the interrelationships among extractive economic dependence, the transformation of employment opportunity structures, human capital utilization, skilled labor mobility, and population development in West Kalimantan. This approach was chosen because the issues under study involve not only the magnitude of economic and employment indicators but also the structures and mechanisms linking regional economic development to the labor market's capacity to utilize human capital. The research does not aim to test statistical causal relationships; rather, it seeks to formulate a diagnosis based on empirical evidence and relevant literature, subsequently translating that diagnosis into policy alternatives.

The study utilizes secondary data obtained from official statistical sources, government policy documents, and scholarly literature. Economic and employment data are primarily sourced from the West Kalimantan Provincial Statistics Agency (BPS), covering Gross Regional Domestic Product (GRDP) by economic sector, labor absorption structure, employment status, unemployment rates, and other employment-related indicators. Population data and policy documents provide context regarding population quality, distribution, and mobility, as well as the direction of regional population development. A key policy document utilized is the West Kalimantan Province Population Development Roadmap 2026–2030, established via the West Kalimantan Governor's Decree Number 76/BAPPERIDA/2026. Scholarly literature serves as the basis for interpreting empirical findings through the lenses of structural transformation, human capital, skills mismatch, job quality, the economics of migration, skilled labor mobility, and population development.

The analysis begins by mapping the characteristics of West Kalimantan's economic structure and the position of resource based sectors within the regional economy. It

considers not only the sectors' contributions to the Gross Regional Domestic Product (GRDP) but also their linkages to the employment structure and the development of the manufacturing sector. Through this approach, dependence on the extractive economy is understood not merely in terms of the magnitude of the resource sector's contribution, but rather by the extent to which these activities foster economic diversification, value addition, inter-sectoral linkages, and increasingly productive employment opportunities.

The analysis of skills mismatch is framed as an issue requiring both conceptual and empirical examination, rather than as a predetermined condition. Existing secondary data do not allow for the direct measurement of the alignment between individual competencies and job requirements at the micro level. Consequently, this study utilizes educational structures, employment opportunity characteristics, sectoral labor distribution, and job quality indicators as a basis for identifying potential misalignments in human capital utilization. These interpretations are further substantiated by literature on skills mismatch and overeducation. This approach enables the study to clearly distinguish between facts evidenced by the data and interpretations that require further verification.

Skilled labor mobility is analyzed within the context of labor market dynamics linked to regional disparities in economic opportunities and job quality. The analysis incorporates the economic perspective of migration, which posits that relocation decisions are driven by a comparison between mobility costs and expected economic benefits including income, job fit, career prospects, and working conditions. Mobility is also understood as a multidimensional phenomenon influenced by social factors, family ties, networks, and individual preferences. Thus, the study does not assume that local job constraints automatically trigger migration; instead, it analyzes migration as one possible mechanism arising from structural differences in opportunities between regions of origin and destination.

The next stage involves policy analysis utilizing Bardach's (2009) Eightfold Path framework. This framework is applied following the substantive diagnosis, serving as a tool to translate research findings into policy options rather than as a theory explaining the relationships between the economy, the labor market, human capital, and mobility. The policy analysis encompasses problem definition, evidence gathering, alternative formulation, criterion setting, consequence projection, trade off identification, alternative selection, and recommendation development.

To ensure accurate interpretation, the study employs source triangulation by comparing statistical data, policy documents, and scholarly literature. Triangulation is used to distinguish empirical facts from interpretations and hypothesized mechanisms. The study's limitations primarily stem from the unavailability of micro-data directly measuring the alignment of education and skills with employment, as well as individual-level mobility histories of skilled workers. Consequently, the study does not aim to quantify the magnitude of "brain drain" or establish direct causal relationships. Instead, the conclusions focus on identifying structural patterns and mechanisms supported by available evidence, serving as a foundation for formulating economic and labor transformation policies in West Kalimantan.

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RESULTS AND DISCUSSION

Economic Structure and Structural Transformation

Analysis indicates that labor issues in West Kalimantan cannot be accurately assessed solely by looking at the unemployment rate. In February 2026, West Kalimantan's Open Unemployment Rate (TPT) stood at 4.57%, signifying that the majority of the workforce was absorbed into economic activities. However, simultaneously, 45.70% of the employed population remained concentrated in the agriculture, forestry, and fisheries sectors, whereas workers in the manufacturing industry accounted for only 6.68%. Furthermore, the proportion of informal workers reached 58.51% (BPS West Kalimantan Province, 2026). This configuration reveals that the core issue is not merely whether the economy can generate jobs, but rather the nature of the available employment and the extent to which the employment structure is undergoing transformation.

These labor findings become more significant when viewed alongside the region's economic structure. In 2025, West Kalimantan's Gross Regional Domestic Product (GRDP) reached approximately IDR 328.57 trillion. The agriculture, forestry, and fisheries sectors generated around IDR 71.18 trillion, mining and quarrying contributed about IDR 21.34 trillion, and the manufacturing industry accounted for approximately IDR 51.60 trillion (BPS West Kalimantan Province, 2026). Thus, non primary economic activities have indeed expanded, and the manufacturing industry possesses a substantial economic base. However, this significant output contribution is not yet fully reflected in shifts within the employment composition. This highlights the challenge regarding structural transformation in West Kalimantan: changes in the production structure have not been fully matched by changes in the employment structure.

Table 1. Economic and Employment Structure of West Kalimantan

Indicator	Condition	Initial Interpretation
West Kalimantan GRDP, 2025	± IDR 328.57 trillion	The regional economy has a relatively substantial economic scale
Agriculture, Forestry, and Fisheries	± IDR 71.18 trillion	The primary sector remains a strong economic base
Mining and Quarrying	± IDR 21.34 trillion	Resource-based economic activities remain important
Manufacturing Industry	± IDR 51.60 trillion	A substantial manufacturing activity base is present
Employment in Agriculture, Forestry, and Fisheries	45.70%	Employment remains highly concentrated in the primary sector
Employment in Manufacturing Industry	6.68%	Manufacturing has relatively limited employment absorption
Informal Employment	58.51%	Informal employment remains dominant

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Indicator	Condition	Initial Interpretation
Unemployment Rate (TPT)	4.57%	Unemployment is relatively low

Source: BPS West Kalimantan Province (2026), Employment Situation in West Kalimantan Province (February 2026) and West Kalimantan GRDP (2025); processed by the researcher.

These figures reveal a disparity between the scale of economic activity and the depth of labor transformation. The manufacturing industry generates significant economic value, yet its contribution to labor absorption remains far lower than that of the agriculture, forestry, and fisheries sectors. This does not automatically imply that the manufacturing industry is unproductive; rather, the discrepancy may indicate that certain manufacturing activities possess higher labor productivity or are more capital intensive in nature. However, from the perspective of population development, this situation demonstrates where an increasingly educated and highly skilled workforce can find productive employment opportunities.

Depth of Economic Transformation

The distinction between output structure and employment structure becomes increasingly significant when viewing economic transformation through the lens of job creation. An economy can grow without undergoing profound changes in its employment structure if that growth stems primarily from productivity gains, capital intensification, or the expansion of activities that are not labor intensive. Consequently, development success cannot be measured solely by Gross Regional Domestic Product (GRDP) growth or the rising contribution of specific sectors; it must also be assessed by the economic transformation's ability to generate jobs characterized by higher productivity and quality. Data from West Kalimantan provides a compelling basis for examining this issue. Nearly half of the workforce remains employed in agriculture, forestry, and fisheries, whereas the manufacturing sector accounts for only 6.68% of workers (BPS West Kalimantan Province, 2026). Simultaneously, more than half of the workforce falls into the informal category. This structure indicates that the regional labor market retains significant capacity to absorb labor through primary and informal sectors, yet it fails to demonstrate a commensurate shift toward formal, professional, and skill based employment resulting from economic transformation.

Table 2. Diagnosis of the Depth of Economic Transformation in West Kalimantan

Dimension	Findings	Discussion Implications
Employment Structure	45.70% of workers are employed in agriculture, forestry, and fisheries	The shift of labor toward higher-value-added sectors has not yet become dominant
Manufacturing Industry	Contributes approximately IDR 51.60 trillion to GRDP but absorbs only 6.68% of	Industrial value added does not necessarily translate into broader industrial

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Dimension	Findings	Discussion Implications
	the workforce	employment
Informality	58.51% of workers are in informal employment	Employment absorption still occurs predominantly outside formal employment arrangements
Employment Diversification	Sectoral data indicate that the primary sector remains dominant	Productive employment alternatives remain relatively limited
Skill-Based Employment	Direct data on the composition of skilled employment are not yet available	Further mapping of skill requirements and skill utilization is needed

Source: BPS West Kalimantan Province (2026)

The table indicates that the challenge regarding West Kalimantan's transformation lies in the quality of structural change, rather than merely the emergence of new sectors. While the presence of a manufacturing industry contributing significantly to the Gross Regional Domestic Product (GRDP) is a vital asset for economic diversification, it is insufficient to claim that a profound transformation in employment has occurred. What requires attention is whether these activities generate local supply chains, support services, and a demand for professionals, technical roles, managerial functions, research, technology, marketing, logistics, and more complex business services.

Human Capital and Skills Mismatch

The analysis indicates that the issue of economic transformation is directly linked to the utilization of human capital. According to Human Capital Theory, education, knowledge, skills, and experience constitute forms of capital that enhance an individual's productive capacity (Becker, 1964). However, such investments yield optimal economic benefits only when there are jobs that allow these competencies to be utilized and further developed.

In the context of West Kalimantan, available macro-level data do not permit a direct measurement of skills mismatch. The data lack information that simultaneously links education levels, actual competencies, job types, job requirements, and the extent of skill utilization. Consequently, this study does not conclude that a skills mismatch has been proven to exist. Instead, it highlights structural conditions that make this issue relevant for examination, particularly given that the labor market remains dominated by the primary and informal sectors (BPS West Kalimantan Province, 2026).

Table 3. Empirical Position of Human Capital Utilization

Aspect	Data Condition	Interpretation
Unemployment	Unemployment rate (TPT): 4.57%	Does not indicate a problem of mass unemployment
Primary-Sector Concentration	45.70%	Indicates a strong concentration of

Aspect	Data Condition	Interpretation
		employment in the primary sector
Informality	58.51%	Indicates the dominance of employment outside formal employment structures
Education–Job Match	Not yet measured	Does not allow a conclusion regarding skills mismatch
Overeducation	Not yet measured	Does not allow a conclusion regarding overqualification
Employer Skills Gap	Not yet measured	Requires data from employers
Skills Utilization	Not yet measured	Requires data from both workers and employers

Source: BPS West Kalimantan Province (2026)

The table actually highlights a crucial point: low unemployment cannot be taken as evidence that human capital is being optimally utilized. An individual may be employed, yet their job does not necessarily align with their education and competencies. In the literature on skills mismatch, such discrepancies can manifest as overeducation, undereducation, overskilling, or underskilling each carrying distinct implications for productivity and earnings (Leuven & Oosterbeek, 2011; McGuinness et al., 2018).

Job Quality and Mobility

The mere existence of jobs does not automatically indicate that a region's economic structure is successfully leveraging human capital to its full potential. For skilled workers, the quality of employment opportunities is crucial; competencies acquired through education, training, and experience yield economic benefits only when jobs allow those competencies to be utilized and further developed. Consequently, labor market conditions cannot be adequately assessed solely by unemployment rates; one must also consider the characteristics of available jobs, the structure of employment relationships, opportunities for skill development, and the career prospects offered by such employment.

From Sjaastad's (1962) perspective, migration constitutes an investment in human capital, as individuals weigh expected benefits against the costs incurred by relocating. This framework helps explain why workers might consider moving despite already being employed. If a job in the destination region offers economic and professional benefits that outweigh the costs of mobility, relocation becomes a rational decision. Therefore, the mobility of skilled labor should be viewed as a process of aligning the location of human capital with the location of economic opportunities.

On this basis, the mobility of skilled labor cannot be immediately equated with "brain drain." Establishing the occurrence of brain drain requires evidence regarding the individuals involved, their skill levels or qualifications, the permanence of the move, and the extent to which the relocation diminishes the human capital capacity available to the region of origin.

The aggregate employment data for West Kalimantan utilized in this study does not yet provide such information. Therefore, "brain drain" is treated as a potential consequence requiring verification, while "skilled labor mobility" serves as the primary concept for analyzing the inter-regional distribution of human capital.

The implication for population development is that policies should not focus solely on increasing the number of educated individuals or controlling population movement. Enhancing human quality must go hand in hand with boosting regional economic capacity to create jobs that match that quality. Strengthening education and skills without altering the structure of labor demand risks creating a mismatch between skill supply and demand. Conversely, an economic transformation that expands high-value-added sectors, strengthens local value chains, fosters professional services, and improves job quality can create greater opportunities to utilize human capital within the region.

Human Capital Mobility and Population Development

The discussion in the preceding section demonstrates that population development cannot be decoupled from the capacity of the regional economic structure to leverage human capital. While improvements in education and skills enhance the population's productive capacity, the benefits for regional development hinge on the availability of employment opportunities that allow these competencies to be utilized and further developed. Consequently, the challenge of population development extends beyond merely enhancing the quality of the population; it also encompasses how the region provides productive economic avenues for the population whose quality has been elevated.

The implications become more pronounced when considering the issue of skills mismatch. This study lacks the data required to directly measure the alignment between education and employment, overeducation, or skills gaps perceived by employers. Consequently, it would be inappropriate to conclude that West Kalimantan is experiencing a skills mismatch based solely on the aggregate data. Nevertheless, the observed economic and employment structures provide empirical grounds to identify this issue as an area requiring further assessment. Given that a large portion of the workforce remains concentrated in the primary and informal sectors while the economic structure simultaneously shows growth in the manufacturing industry there is a need to determine whether the competencies of the available workforce align with the requirements of these expanding sectors.

In this context, the mobility of skilled labor can be viewed as a potential response to such imbalances. Workers consider not only the availability of jobs but also income quality, stability, career development opportunities, the utilization of skills, and future prospects. Regional disparities in these opportunity characteristics can create incentives for labor mobility. Within the framework proposed by Sjaastad (1962), migration is an investment decision that weighs the expected costs and benefits of mobility. Consequently, mobility should not be treated merely as a result of a region's failure to retain its population, but rather as part of an adjustment mechanism balancing the distribution of human capital and economic opportunities.

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This dimension holds significant implications for the West Kalimantan Province Population Development Roadmap (2026–2030), which is being implemented pursuant to West Kalimantan Governor's Decree Number 76/BAPPERIDA/2026. The population development agenda needs to be more closely aligned with economic and labor policies. Enhancing education and skill levels must go hand in hand with mapping labor market needs, developing high-value-added sectors, strengthening education-industry linkages, fostering professional roles, and creating work environments that enable career advancement. Without such integration, population policies risk overemphasizing the human "supply" side while neglecting the creation of economic "demand" for the competencies being produced.

Synthesis and Policy Implications

The discussion in the preceding section demonstrates that labor and population development issues in West Kalimantan cannot be explained by a single indicator. An economic structure still heavily reliant on resource based sectors interacts with a concentration of the workforce in the primary sector, high levels of informality, and unmeasured factors such as skills mismatches, the quality of employment opportunities, and the mobility of skilled labor. When these findings are viewed within a unified framework, the emerging issue is not merely a limited number of jobs, but rather an imbalance between human capital development and the depth of the structural transformation of employment opportunities.

BPS data indicates that as of February 2026, the agriculture, forestry, and fisheries sectors still absorbed 45.70% of West Kalimantan's workforce, while informal workers accounted for 58.51% (BPS West Kalimantan Province, 2026). This structure cannot automatically be deemed a development failure; the primary sector continues to make a significant contribution to the regional economy, and informal jobs do not all share the same characteristics. Structural issues arise when the growth of value-added economic sectors is not accompanied by commensurate changes in job types, skill requirements, productivity, and the quality of employment opportunities.

Table 7. Synthesis of Structural Diagnosis and Policy Intervention Space

Empirical Findings	Structural Diagnosis	Problem Mechanism	Implications for Human Capital	Scope for Intervention
45.70% of the workforce is employed in agriculture, forestry, and fisheries	Employment transformation has not kept pace with broader economic diversification	Sectoral diversification has not yet translated into a substantial shift in employment opportunities	Opportunities to utilize more specialized and professional competencies need to be expanded	Economic diversification and value-chain development
58.51% of workers are	The capacity to create formal	Some economic	Opportunities for competency	Improving productivity and

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Empirical Findings	Structural Diagnosis	Problem Mechanism	Implications for Human Capital	Scope for Intervention
engaged in informal employment	and quality jobs needs to be strengthened	activities may not provide stable employment or sufficient prospects for career development	development and career advancement may be limited in certain jobs	job quality, accompanied by gradual formalization
No aggregate indicator of skills mismatch is currently available	The alignment between skills supply and labor-market demand has not been adequately mapped	Workforce competencies cannot yet be directly compared with the skill requirements of different economic sectors	The extent of skills underutilization cannot yet be measured	Skills-needs mapping, skills forecasting, tracer studies, and education–industry partnerships
Job attractiveness varies across regions	Regional economic and professional attractiveness may differ from that of destination areas	Workers may compare income, job quality, and career prospects across regions	Labor mobility can function as an adjustment mechanism	Improving job quality, remuneration, career pathways, and the professional ecosystem
Skilled labor mobility cannot yet be confirmed as brain drain	Information on mobility histories and patterns remains limited	It remains unclear whether migration is permanent or accompanied by continued ties with the region of origin	The impact of mobility on the spatial distribution of human capital cannot yet be directly measured	Strengthening mobility data and skilled-labor networks
Downstreaming does not automatically generate skilled employment	Growth in value added may occur without proportional changes in the	Technology intensity, capital intensity, and local economic	Higher economic value added does not necessarily result in greater	Technology-based downstreaming, strengthening local suppliers,

Empirical Findings	Structural Diagnosis	Problem Mechanism	Implications for Human Capital	Scope for Intervention
	employment structure	linkages influence the extent of labor absorption	utilization of skilled labor	and developing professional services
Improvements in workforce quality have not been matched by a guaranteed expansion of suitable employment opportunities	Growth in human capital supply may become misaligned with labor demand	Education and skill levels may advance faster than the diversification of jobs requiring those competencies	Some human capital may consequently be utilized outside the region	Synchronizing education, investment, industry, innovation, and labor policies

Source: BPS Provinsi Kalimantan Barat (2026); diolah peneliti.

This analysis points to three interconnected areas for intervention. First, aligning competency development with regional economic transformation so that education and training go beyond merely boosting labor supply and instead link directly to the needs of expanding business sectors. Second, improving job quality and the professional ecosystem, ensuring the workforce has opportunities to utilize their skills, earn fair compensation, and advance their careers within the region. Third, deepening downstreaming efforts through technology and local value chains, ensuring that value-added growth extends beyond output to drive changes in productivity, job structures, and the demand for skilled labor.

This diagnosis forms the basis for the policy analysis in the subsequent section. That analysis evaluates intervention alternatives capable of strengthening the linkages between competency development, job quality, and economic transformation. Utilizing Bardach's "Eightfold Path" framework, these alternatives can be compared based on effectiveness, implementation feasibility, institutional capacity, cost, equity of benefits, and sustainability.

CONCLUSION

This study demonstrates that the issue of population development in West Kalimantan cannot be separated from the depth of economic transformation and the region's capacity to provide employment opportunities that align with human capital development. A natural resource-based economic structure is not inherently problematic; issues arise when resource-based activities fail to fully evolve into economic diversification, downstream processing, industrial linkages, and the creation of jobs that are increasingly productive and demand higher levels of competence. Consequently, the success of economic transformation cannot be measured solely by increases in Gross Regional Domestic Product (GRDP) or the growth of the manufacturing sector, but also by shifts in the employment structure and the regional economy's ability to leverage the quality of its workforce.

The study also suggests that "skills mismatch" should be viewed as a mechanism requiring further verification, rather than as an established fact at the aggregate level in West Kalimantan. Available data do not yet directly link education, actual competence, job requirements, and skill utilization levels at either the individual or firm level. Nevertheless, the observed economic and employment structures provide a basis for identifying a potential misalignment between human capital development and the demand for skills in the labor market. If workforce competencies develop more rapidly than the jobs capable of utilizing them, some workers may face underutilization or seek more suitable opportunities in other regions.

These findings lead to the conclusion that the primary challenge in West Kalimantan's population development is not merely about improving population quality or preventing the out-migration of skilled labor; rather, it concerns the region's economic transformation capacity to convert human capital into regional productive capacity. From this perspective, population development and economic development cannot be treated as separate agendas. Improvements in education and skills must go hand-in-hand with shifts in economic structure, enhancements in job quality, and a growing demand for higher-level competencies.

Based on this diagnosis, three intervention pathways emerge as focal points for policy analysis. First, aligning competency development with economic transformation needs by strengthening ties between education and the business sector, mapping skill requirements, and facilitating the transition from education to employment. Second, improving job quality and the professional ecosystem including career development opportunities and compensation packages to better retain skilled labor. Third, deepening technology-driven downstream processing and local value chains, ensuring that the value-added enhancement of commodities goes beyond mere output growth to generate productive jobs, expand the demand for competencies, and strengthen the region's economic capacity.

The study's results also highlight certain limitations that warrant attention. The available secondary data do not yet allow for the direct measurement of skills mismatch, overeducation, skilled labor mobility patterns, or the magnitude of brain drain in West Kalimantan. Therefore, the research findings are best understood as a structural diagnosis and a basis for policy formulation rather than as proof of causal relationships. Future research needs to strengthen the micro-data base through competency mapping, tracer studies of skilled labor, employer surveys, and migration data categorized by education, skills, destination, duration, and the nature of the connection to the region of origin. Such data would enable a more direct assessment of the extent to which West Kalimantan's economic transformation can retain, attract, and utilize human capital for regional population development.

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