

DETERMINANTS OF UNEMPLOYMENT STATUS IN URBAN AREAS OF WEST KALIMANTAN

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Abstract

Unemployment remains an important labor market issue in urban areas of West Kalimantan, where the open unemployment rate is considerably higher than in rural areas. This study aims to identify the individual characteristics associated with unemployment status among the urban labor force in West Kalimantan in 2025. Using August 2025 National Labor Force Survey (SAKERNAS) microdata from BPS-Statistics Indonesia, this study analyzes 5,832 individuals aged 15 years and above residing in urban areas. Binary logistic regression was employed to examine the association between unemployment status and household head status, gender, age, marital status, educational attainment, graduation year, and training participation. The results indicate that all seven variables are significantly associated with unemployment status at the 5 percent significance level. Non-household heads, male workers, younger workers, unmarried individuals, workers with higher educational attainment, and recent graduates have higher odds of unemployment. Conversely, individuals who had not participated in training had lower odds of unemployment than those who had participated in training. The model demonstrates adequate goodness of fit, with an overall classification accuracy of 93.7 percent. These findings highlight the importance of considering individual demographic and socioeconomic characteristics, particularly youth and the school-to-work transition, in understanding and addressing urban unemployment in West Kalimantan.

Keywords: Unemployment; Urban Labor Force; Binary Logistic Regression; Labor Market; West Kalimantan

1. Introduction

Labor development is crucial to achieving the Sustainable Development Goals (SDGs), particularly Goal 8, which emphasizes inclusive economic growth, productive employment, and decent work (UN, 2015). In this context, unemployment is an important indicator of the labor market's capacity to absorb the available workforce. Following the disruptions caused by the COVID-19 pandemic, Indonesia's labor market has shown signs of improvement, although the recovery has not been evenly distributed across population groups. In August 2025, Indonesia's open unemployment rate, hereafter referred to as TPT (*Tingkat Pengangguran Terbuka*), stood at 4.85 percent. The urban TPT was higher at 5.75 percent, compared with 3.47 percent in rural areas (Figure 1), indicating substantial differences in unemployment conditions by area of residence.

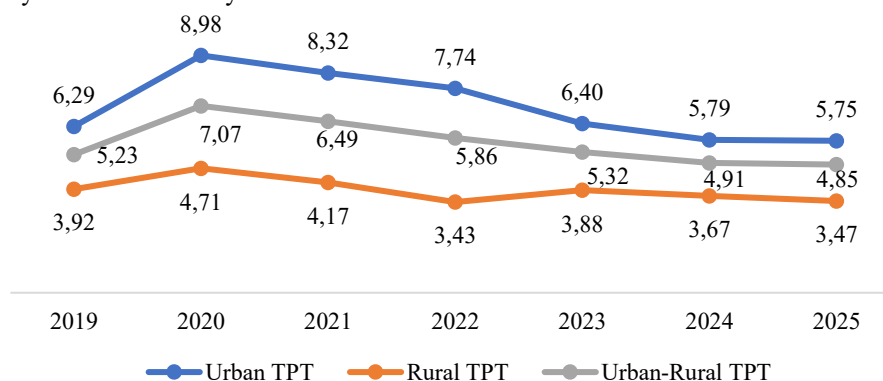


Figure 1. Indonesia's TPT Trends by Urban-Rural Classification, 2019–2025

Source: BPS-Statistics Indonesia

Differences in labor market conditions are also evident across the provinces of Kalimantan (Figure 2). In 2025, several provinces recorded TPT levels below their pre-pandemic rates in 2019, whereas West Kalimantan had not yet returned to its 2019 level. West Kalimantan's TPT in August 2025 stood at 4.82 percent, decreasing by only 0.04 percentage points from the previous year but remaining above the August 2019 rate of 4.35 percent. Meanwhile, the national TPT was 4.85 percent in August 2025. Although West Kalimantan's TPT remained slightly below the national rate, the gap had narrowed substantially, from 0.88 percentage points in 2019 to just 0.03 percentage points in 2025. This narrowing gap suggests that West Kalimantan's relative position in terms of unemployment has weakened compared with the pre-pandemic period.

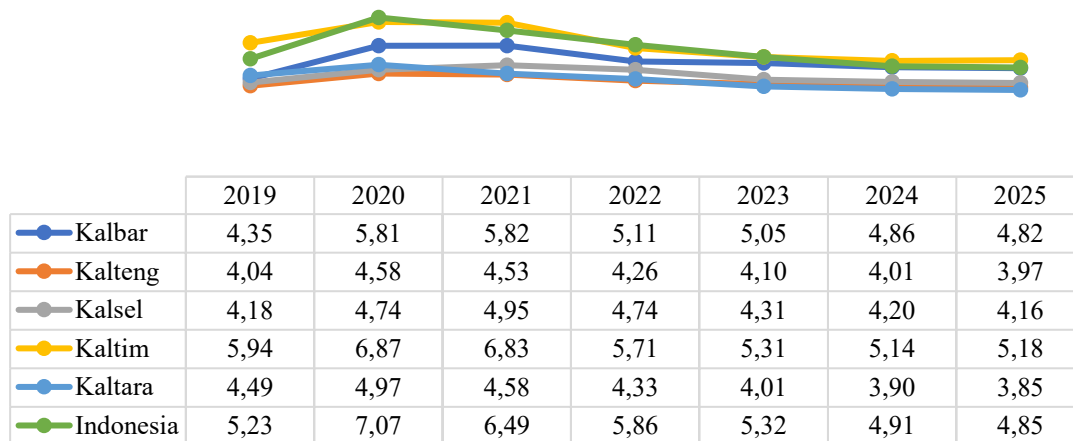


Figure 2. TPT Trends in Indonesia and Kalimantan, 2019–2025

Source: BPS-Statistics Indonesia

Disparities in employment conditions in West Kalimantan are also evident by area of residence (Figure 3). In 2025, the rural TPT in West Kalimantan was 3.17 percent, lower than the national rural TPT of 3.47 percent. In contrast, the urban TPT reached 7.26 percent, exceeding the national urban TPT of 5.75 percent. Moreover, the urban TPT in West Kalimantan increased slightly from the previous year, widening the gap between urban and rural areas. These differences highlight substantial variation in unemployment conditions by area of residence, with urban areas experiencing a considerably higher TPT. This pattern provides a basis for examining the individual characteristics associated with unemployment status in urban areas of West Kalimantan.

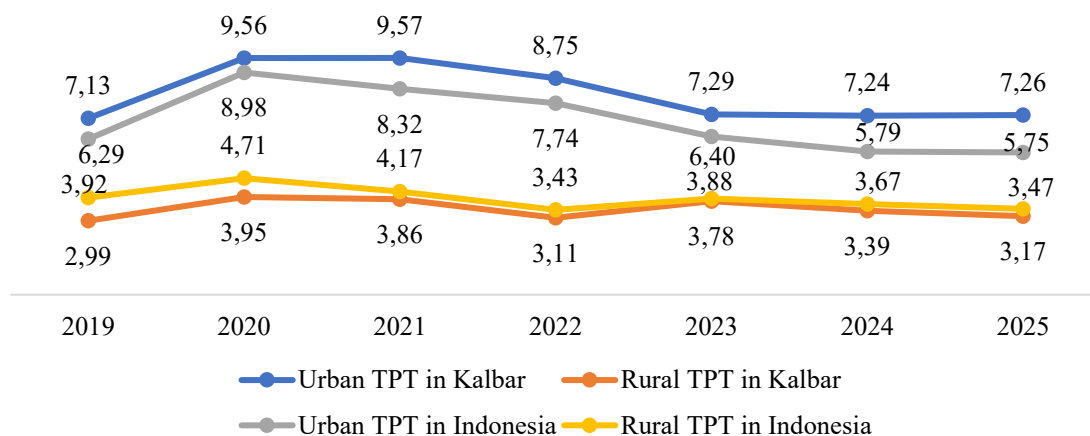


Figure 3. Urban–Rural TPT Trends in Indonesia and West Kalimantan, 2019–2025

Source: BPS-Statistics Indonesia

Theoretically, unemployment status is associated with human capital and the job search process. Human Capital Theory views education, training, and experience as investments that enhance productivity and employment opportunities (Becker, 1975). Meanwhile, Job Search Theory emphasizes the role of time and information in matching individuals with jobs suited to their qualifications and

characteristics (Stigler, 1962). Thus, unemployment status is shaped not only by broader labor market conditions but also by individual characteristics and the process of transitioning into employment.

Previous studies in Indonesia have identified a range of factors associated with unemployment across different population groups and settings. Education, training participation, gender, and residential area have been found to be associated with educated unemployment (Setyanti & Finuliyah, 2022). Vocational education and training have also been associated with youth unemployment (Maulana & Suryaningrum, 2023). Furthermore, demographic characteristics, household head status, marital status, training participation, and regional conditions have been found to be associated with unemployment among educated youth in Banten (Alharis & Yuniasih, 2022). More recently, training participation and regional characteristics have been associated with unemployment among educated youth in urban areas of Java (Septiana & Utomo, 2025). Taken together, these studies provide empirical evidence that the factors associated with unemployment may differ across population groups and regional contexts.

Despite the growing literature on unemployment in Indonesia, previous studies have predominantly focused on youth, educated unemployed populations, or specific regions. Evidence on the individual characteristics associated with unemployment status among the working-age population in urban areas of West Kalimantan remains limited. This gap is particularly relevant given the relatively high urban TPT in the province and its distinct labor market conditions compared with other areas in Kalimantan. Therefore, an individual-level analysis is needed to identify characteristics associated with unemployment status in urban West Kalimantan.

Accordingly, this study examines the individual characteristics associated with unemployment status among the working-age population in urban areas of West Kalimantan. By focusing on the individual level, this study contributes empirical evidence on the determinants of unemployment in an understudied regional context and provides insights into employment policies that consider the characteristics of urban populations.

2. Literature Review

Human Capital Theory and Job Search Theory provide complementary explanations of unemployment differences across individuals. Human Capital Theory suggests that differences in education, training, and accumulated work experience shape individuals' employment-related capabilities and their position in the labor market (Becker, 1975). In contrast, Job Search Theory explains unemployment through differences in search behavior, information, and the time required to obtain a job that matches individual characteristics and expectations (Stigler, 1962). Together, these perspectives imply that unemployment outcomes may differ according to both individuals' labor-market attributes and the process through which they seek and obtain employment.

Previous studies show that unemployment is associated with various demographic and socioeconomic characteristics, including household head status, gender, age, marital status, education, graduation status, and training participation. Household heads and married individuals generally exhibit stronger labor-market attachment, while young workers and recent graduates tend to face greater unemployment risks due to limited work experience and challenges in the school-to-work transition (Boedirochminarni et al., 2026; Tulcanaza-Prieto et al., 2023; Vaccaro et al., 2023; Verick, 2023). Gender differences have also been linked to wage structures and job-search behavior (Apriliansyah & Wulansari, 2021; Sipayung et al., 2022).

The relationship between education and unemployment is more complex. Although education is generally expected to improve employment opportunities, several studies find higher unemployment among more educated workers, potentially reflecting greater job-search selectivity and longer job-matching processes (Jayanti & Diksa, 2024; Susanti & Annisa, 2024). Training participation also shows mixed effects, with evidence of possible short-term lock-in effects that may reduce job-search intensity during training (Lammers & Kok, 2021; Rosholm & Skipper, 2009). Overall, the literature indicates that unemployment is shaped by multiple individual characteristics whose relationships may vary across labor-market contexts. However, evidence remains limited for the broader working-age population in urban West Kalimantan, providing a basis for examining these determinants simultaneously in the provincial urban labor market.

3. Research Methods

3.1. Object, time and Place

This study employs a quantitative approach with a cross-sectional design to analyze the determinants of unemployment status among the labor force residing in urban areas of West Kalimantan Province in 2025. The study covers all regencies and municipalities in West Kalimantan that have urban areas.

3.2. Data Collection Techniques

The data used in this study were obtained from Statistics Indonesia (BPS), consisting of the August 2025 National Labor Force Survey (SAKERNAS) microdata and relevant official BPS publications. The unit of analysis is the labor force aged 15 years and above residing in urban areas of West Kalimantan. Based on these criteria, a total of 5,832 individual observations were obtained and subsequently used for model estimation. The dependent variable in this study is unemployment status, represented as a binary (dichotomous) variable. The independent variables consist of seven individual socio-demographic and economic characteristics, which are operationalized as dummy variables. The detailed operationalization of the variables is presented in the following table.

Table 1. List of dependent and independent variables

Variable (1)	Notation (2)	Category (3)
Dependent Variable		
Status of Unemployment	Y	0 : Working* 1 : Unemployed
Independent Variable		
Household Head Status	X_1	0 : Head-of-household* 1 : Not head-of-household
Gender	X_2	0 : Female* 1 : Male
Age	X_3	0 : Young worker (≤ 25 years)* 1 : Prime-age worker (26 – 54 years) 2 : Elderly worker (≥ 55 years)
Marital Status	X_4	0 : Unmarried* 1 : Married
Educational Attainment	X_5	0 : No formal education* 1 : Primary/lower secondary 2 : Upper secondary 3 : Tertiary
Graduation Year	X_6	0 : More than 1 year ago* 1 : Less than 1 year ago
Training Participation	X_7	0 : Yes* 1 : No

*) Reference Category

3.3. Data Analysis Techniques

The analytical methods used in this study consist of descriptive and inferential analyses. Descriptive analysis is employed to provide an overview of the characteristics of unemployment in urban areas of West Kalimantan in 2025, presented in the form of tables and graphs. Inferential analysis is used to examine the associations and patterns between the independent variables and unemployment status in urban areas of West Kalimantan in 2025 using binary logistic regression. The general form of binary logistic regression, as proposed by Hosmer et al. (2013), is as follows.

$$\pi(x) = \frac{\exp(\beta_0 + \beta_1 x_1 + \dots + \beta_p x_p)}{1 + \exp(\beta_0 + \beta_1 x_1 + \dots + \beta_p x_p)} \quad (1)$$

The model is nonlinear; therefore, a logit transformation is applied to convert the logistic regression model into a linear form, as follows:

$$\pi(x) = \frac{\exp(\beta_0 + \beta_1 x_1 + \dots + \beta_p x_p)}{1 + \exp(\beta_0 + \beta_1 x_1 + \dots + \beta_p x_p)} \quad (2)$$

The stages of binary logistic regression analysis employed in this study are as follows:

- Parameter estimation using the *Maximum Likelihood Estimation* (MLE) method.
- Model goodness-of-fit testing using the Hosmer–Lemeshow test. The model is considered to have an adequate fit when the *p-value* is greater than 0.05.
- Regression coefficient testing using the simultaneous *likelihood ratio test* and the partial *Wald test*. The expected result is to reject the null hypothesis for both tests, indicated by a *p-value* below the 5% significance level.

- d. Interpretation of the odds ratios to assess the direction and magnitude of the association between the independent variables and unemployment status.

4. Results and Discussion

4.1. Research Results

Figure 4 shows the distribution of employment status among the urban labor force in West Kalimantan in 2025. The majority of the urban labor force is employed, accounting for 92.74%, while 7.26% are unemployed. This indicates that although most individuals in the urban labor force are employed, a proportion of the labor force remains unemployed. The 7.26% unemployment rate provides an important basis for further analysis of the demographic and socioeconomic factors associated with unemployment in urban areas of West Kalimantan.

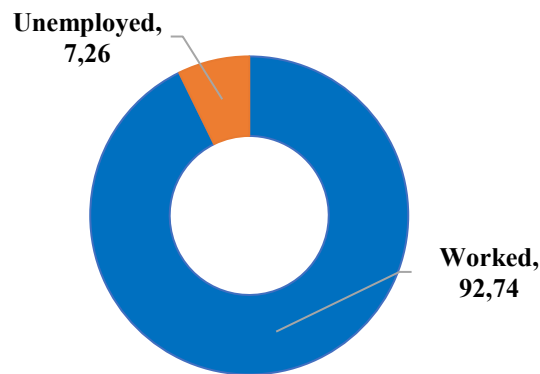


Figure 4. Urban Employment Status in West Kalimantan, 2025

Source: BPS-Statistics Indonesia, August 2025 SAKERNAS, processed by the authors

Figure 5 presents the demographic and socioeconomic characteristics of the urban labor force in West Kalimantan in 2025. In terms of household status, 52.37% of the urban labor force are household heads, while 47.63% are not household heads. By gender, the labor force is predominantly male, accounting for 61.28%, compared with 38.72% female. In terms of age composition, the majority of the urban labor force consists of prime-age workers (69.22%). Young workers account for 16.04%, while elderly workers represent 14.74%. This indicates that the urban labor force is largely concentrated among individuals in their prime working age. Regarding marital status, 72.61% of the urban labor force are married, while 27.39% are unmarried. In terms of educational attainment, the largest proportion has completed senior high school (40.01%), followed by primary or junior high school (29.33%) and higher education (19.76%). Meanwhile, 10.90% have no formal education.

With respect to graduation year, the majority of the urban labor force (87.31%) completed their highest level of education more than one year prior, whereas 12.69% graduated less than one year prior. Furthermore, participation in training remains relatively limited. Only 24.40% of the urban labor force have participated in training, while the majority (75.60%) have not. Overall, the urban labor force in West Kalimantan in 2025 is predominantly male, prime-age, and married, with senior high school education being the most common level of educational attainment. Most members of the urban labor force graduated more than one year prior to the survey and had no prior training participation. These characteristics provide an overview of the demographic and socioeconomic composition of the labor force examined in the subsequent analysis of unemployment status.

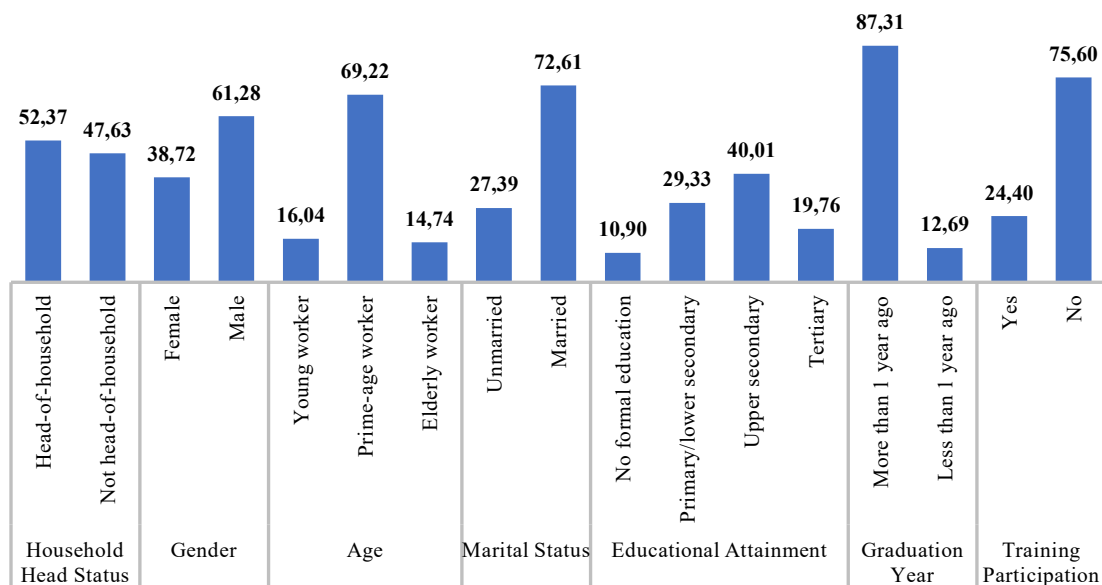


Figure 5. Characteristics of the Urban Labor Force in West Kalimantan, 2025
Source: BPS-Statistics Indonesia, August 2025 SAKERNAS, processed by the authors

The results of the binary logistic regression estimation used to examine the determinants of unemployment status in urban areas of West Kalimantan in 2025 are presented in Table 2. Before interpreting the relationships between the independent variables and unemployment status, a series of tests was conducted to assess the model's goodness of fit and classification performance, including the Hosmer–Lemeshow Test, classification table, Omnibus Test, and Wald Test.

The Hosmer–Lemeshow Test yielded a *p-value* of 0.336, which is greater than the 5% significance level. Therefore, H_0 fails to be rejected, indicating that there is no statistically significant difference between the observed and model-predicted outcomes. This finding suggests that the model has an adequate goodness of fit and is appropriate for analyzing unemployment status in urban areas of West Kalimantan. Furthermore, the classification table shows that the model correctly classified unemployment status with an overall accuracy of 93.7%. This result indicates that the model has a high classification accuracy in distinguishing between individuals who are unemployed and those who are not unemployed.

The Omnibus Test was subsequently employed to assess the overall significance of the model. The test produced a *p-value* of 0.000, which is below the 5% significance level. Therefore, H_0 is rejected, indicating that at least one independent variable is significantly associated with unemployment status in urban areas of West Kalimantan in 2025. This finding indicates that the independent variables, when considered jointly, contribute to explaining variations in unemployment status.

Table 2. Estimation Result of the Binary Logistic Regression

Variable	Category	B	p-value	Odds Ratio
(1)	(2)	(3)	(4)	(5)
Constant		-2.297	0.000	0.101
Household Head Status	Head-of-household (ref)			
	Not Head-of-household	-0.397	0.043	0.672
Gender	Female (ref)			
	Male	0.360	0.007	1.433
Age	Young worker (ref)			
	Prime-age worker	-0.841	0.000	0.431
	Elderly worker	-1.020	0.000	0.361
Marital Status	Unmarried (ref)			
	Married	-1.326	0.000	0.266
Educational Attainment	No formal education (ref)			
	Primary/lower secondary	0.876	0.007	2.402
	Upper secondary	0.894	0.005	2.446

Graduation Year	Tertiary	1.098	0.001	2.998
	More than 1 year ago (ref)			
Training Participation	Less than 1 year ago	0.821	0.000	2.272
	Yes (ref)			
	No	-0.640	0.000	0.527
Hosmer-Lemeshow Test			0.336	
Classification Table (Overall Percentage = 93.7)				
Omnibus Test			0.000	

Source: BPS-Statistics Indonesia, August 2025 SAKERNAS, processed by the authors

The Wald test was used to assess the significance of each independent variable in relation to individual unemployment status. As shown in Table 2, all independent variables have *p-values* below 0.05; therefore, H_0 is rejected for all variables. At the 5% significance level, there is sufficient evidence that household head status, gender, age, marital status, education level, graduation year, and training participation are significantly associated with unemployment status in urban areas of West Kalimantan in 2025. The binary logistic regression equation estimated in this study is presented as follows:

$$\hat{g}(x) = \ln \left(\frac{\hat{\pi}(x)}{1 - \hat{\pi}(x)} \right) = -2.297 - 0.397X_1(1) + 0.360X_2(1) - 0.841X_3(1) - 1.020X_3(2) - 1.326X_4(1) + 0.876X_5(1) + 0.894X_5(2) + 1.098X_5(3) + 0.821X_6(1) - 0.640X_7(1)$$

4.2. Discussion

Household head status is significantly associated with unemployment status among the urban labor force in West Kalimantan. Members of the labor force who were household heads had 0.672 times the odds of being unemployed compared with non-household heads, holding other variables constant. Conversely, non-household heads had 1.488 times the odds of being unemployed compared with household heads. This finding is consistent with evidence from Ecuador and Indonesia showing an association between household head status and unemployment (Jayanti & Diksa, 2024; Tulcanaza-Prieto et al., 2023). The lower odds among household heads may be related to their greater financial responsibilities, which can strengthen labor market attachment, while other household members may receive economic support from the household head (Jayanti & Diksa, 2024).

In terms of gender, gender is significantly associated with unemployment status among the urban labor force in West Kalimantan. Male workers had 1.433 times the odds of being unemployed compared with female workers, holding other variables constant. This finding can be interpreted through Job Search Theory, which links wage levels to job-search duration. In Indonesia, the average monthly wage of male workers in 2025 was IDR 3.59 million, compared with IDR 2.86 million for female workers (BPS, 2025). The higher wage received by men may increase their reservation wages and extend job-search duration, whereas women may enter employment more quickly, including in lower-productivity sectors (Apriliansyah & Wulansari, 2021; Sipayung et al., 2022).

With respect to age, age is significantly associated with unemployment status among the urban labor force in West Kalimantan. Compared with the younger group aged 15–24 years, those aged 25–54 years had 0.431 times the odds of being unemployed, while those aged 55 years and over had 0.361 times the odds, holding other variables constant. Thus, younger workers exhibit higher odds of unemployment than older age groups. This finding is consistent with evidence that youth unemployment tends to be higher because young workers often have limited work experience and face challenges during the transition from education to employment (Ochsen, 2024; Vaccaro et al., 2023; Verick, 2023).

Regarding marital status, never-married members of the labor force had 3.759 times the odds of being unemployed compared with those who had ever been married, holding other variables constant. This result is consistent with evidence that marital and partnership status is associated with stronger labor market attachment (Bonilla & Trejos, 2021; Keldenich & Knabe, 2022; Rensburg et al., 2019). The lower odds of unemployment among those who had ever been married may be related to greater household financial responsibilities and economic interdependence, which can strengthen incentives to remain employed.

In terms of educational attainment, education is significantly associated with unemployment status among the urban labor force in West Kalimantan. Compared with those who had not completed or had never attended primary school, workers with primary or lower secondary education had 2.402 times the odds of being unemployed, those with upper secondary education had 2.446 times the odds, and tertiary graduates had the highest odds at 2.998 times, holding other variables constant. This finding indicates that the odds of unemployment tend to increase with educational attainment and is consistent

with previous evidence of a positive and significant association between education and unemployment (Jayanti & Diksa, 2024; Septiana & Utomo, 2025). The higher odds among tertiary graduates may reflect more selective job-search behavior, as they tend to seek employment that matches their qualifications and field of study, potentially prolonging the job-matching process when suitable opportunities are limited (Susanti & Annisa, 2024).

Regarding the time since graduation, recent graduates also exhibited higher odds of unemployment. Those who had completed their highest level of education within the past year had 2.272 times the odds of being unemployed compared with those who had graduated more than one year earlier, holding other variables constant. This finding may reflect the school-to-work transition, during which recent graduates generally have less work experience and more limited professional networks. Similar evidence indicates that educational and individual characteristics shape early employment outcomes and that the transition from school to work is an important determinant of labor market entry (Boedirochminarni et al., 2026; Weerdt et al., 2024).

In terms of training participation, those who had never participated in training had 0.527 times the odds of being unemployed compared with those who had participated in training, equivalent to 47.3% lower odds, holding other variables constant. This counterintuitive finding may reflect a short-term lock-in effect, whereby participation in training reduces the intensity of job search and may temporarily delay employment (Rosholm & Skipper, 2009). Training effects may therefore be negative in the short term before generating employment benefits over a longer period (Lammers & Kok, 2021). However, this association should not be interpreted as a causal effect.

4.3. Relevance to Research Objectives

The findings directly address the objective of this study, namely to identify individual characteristics associated with unemployment status among the working-age labor force in urban areas of West Kalimantan in 2025. The results demonstrate that household head status, gender, age, marital status, educational attainment, graduation year, and training participation are all significantly associated with unemployment status. Thus, the study provides empirical evidence that unemployment in urban West Kalimantan is not uniformly distributed across the labor force but varies according to individual demographic and socioeconomic characteristics. The findings also fill the research gap identified in the literature by providing individual-level evidence for the broader urban working-age population in West Kalimantan, rather than focusing exclusively on youth or educated workers. In this respect, the study contributes to a more context-specific understanding of urban unemployment and provides an empirical basis for considering differentiated employment interventions, particularly in relation to young workers, recent graduates, and the transition from education to employment.

5. Conclusion

This study finds that unemployment status among the urban labor force in West Kalimantan in 2025 is significantly associated with household head status, gender, age, marital status, educational attainment, graduation year, and training participation. The results show that non-household heads, male workers, younger workers, unmarried individuals, more highly educated workers, and recent graduates have higher odds of unemployment, while individuals who had not participated in training exhibited lower odds of unemployment. The model demonstrates adequate goodness of fit and high classification accuracy (93.7%). Overall, the findings highlight the importance of considering individual demographic and socioeconomic characteristics, particularly youth and school-to-work transitions, in designing employment policies for urban areas of West Kalimantan.

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