

HETEROGENEITY OF WORKER TURNOVER ACROSS REGIONS IN INDONESIA: WHAT IS THE ROLE OF SOCIOECONOMIC?

Heru Kurniawan¹⁾, Azwardi²⁾, Yunisvita³⁾, Imam Asngari⁴⁾

^{1) 2) 3) 4)} Universitas Sriwijaya, Indonesia

Corresponding author: KhoirullKurniawan91@gmail.com

Abstract

The phenomenon of staff turnover does not always reflect a healthy labour market; high turnover can even be an indicator of job instability, which may lead to reduced productivity, overall economic inefficiency and labour market instability. The aim of this study is to examine how wages, education and regional economic growth influence staff turnover rates. Using a panel data regression approach across 34 provinces in Indonesia over the past six years, the results indicate that socio-economic factors such as education, wages and regional GDP significantly reduce turnover rates, although the effect is still relatively small. Regional GDP consistently reduces turnover rates both in the previous year and the current year. Historical factors, such as high wages and high turnover in the previous year, influence high turnover in the current year. Each province exhibits different effects; provinces with diverse economic characteristics maintain high turnover rates, whilst those with homogeneous and limited economic sectors tend to have lower turnover rates. Measures to reduce turnover include enhancing the quality of human resources through education aligned with industrial needs to minimise mismatches, alongside increasing wages and providing better protection to foster worker satisfaction. This study still has limitations in terms of data and variables; therefore, future research could incorporate other characteristics specific to each province over a longer timeframe

Keywords: Turnover, wages, GDP, workers

Introduction

Turnover refers to the movement of workers from one workplace or sector to another. Turnover in various countries is influenced by a range of factors, including differences in economic conditions, work culture, government labour policies, and the challenges posed by increasingly advanced industrial technology. The current turnover in Indonesia reflects the dynamics of the economic and labour market conditions, which are shaped by available business opportunities. According to data from the Central Statistics Agency (BPS) in 2024, more than 10 million workers, or around 4.9%, changed jobs. These movements were predominantly among workers in the services and wholesale trade sectors within the informal sector (BPS, 2025).

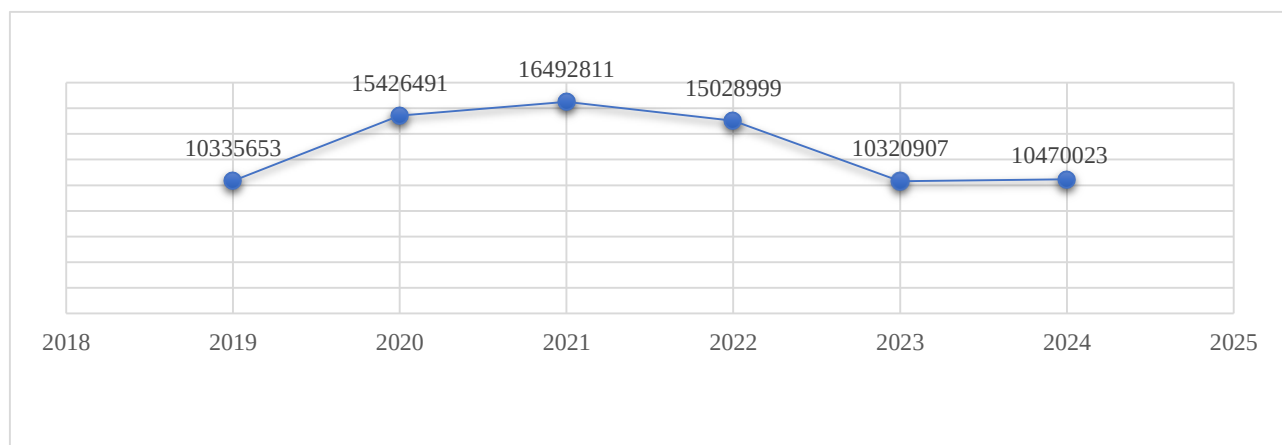


Figure 1. Turnover Rates in Indonesia, 2019–2024

Figure 1 shows the number of workers who changed jobs over the last six years. From 2019 to 2024, there was an increase of 1.4 million workers changing jobs. The largest increase occurred in 2019 with 5.1 million workers; this

significant rise was due to the impact of the COVID-19 pandemic, which led to workers moving from sectors such as tourism and transport to sectors including logistics, healthcare and others. The year 2023 indicates that economic conditions are improving, leading many workers to remain in their previous jobs and thereby reducing the turnover rate. Workers aged 25 to 44 years are the largest contributors to job mobility. This presents a challenge for the government regarding how to maintain employment stability among the working-age population, in order to produce experienced workers and foster sustainable economic growth.

The minimum wage set by the government has continued to rise over the past six years, as shown in Figure 2.

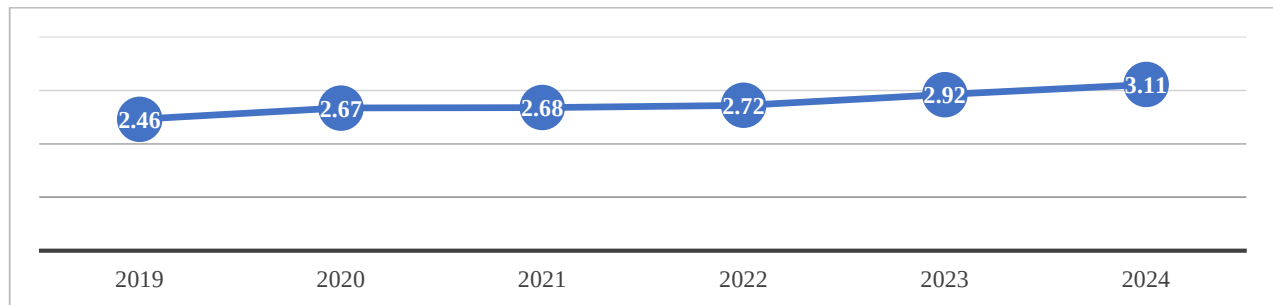


Figure 2. Development of the average national wage (In millions)

Figure 2 shows that the national average wage has continued to rise over the last six years, including in 2020 during the COVID-19 pandemic. These rising wages have been adjusted to reflect the economic conditions of each year, with the aim of providing workers with a decent income.

According to several studies, wages play a role in increasing turnover; for instance, Li (2013) states that disparities in wages and technology increase worker mobility but also lead to wage inequality. Similarly, Bauer, Bachmann & David (2010) note that low initial wages received by workers often increase the likelihood of worker mobility between companies and regions. In contrast, Buhai (2025) argues that mobility is not always influenced by wages; issues of productivity and labour market dynamics are the primary reasons for mobility. Similarly, Liu, K. (2019) notes that limited job opportunities cause workers to remain in their positions even when wages are low. Woods et al. (2024) suggest that wage levels and benefits are unable to improve work quality as this is more influenced by local labour market conditions.

Education is one of the indicators of worker quality in generating productivity and driving economic growth. Figure 3 shows that the quality of Indonesia's human resources continues to improve.

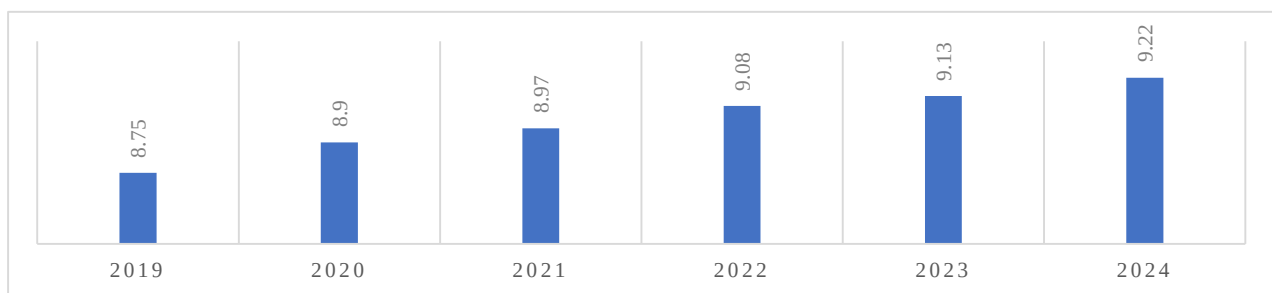


Figure 3. Average years of schooling among the Indonesian population

Figure 3 shows that the quality of human capital, as measured by the average years of schooling, has continued to improve. The duration of education has increased by a total of 0.47 years from 8.75 years in 2019 to 9.22 years in 2024, with the highest increase occurring in 2020, when the average length of schooling rose by 0.15 years, whilst the lowest growth was recorded in 2023 at 0.05 years. On average, the annual growth in years of schooling is 0.07 years, equivalent to 28.1 days.

The quality of human resources plays a role and has an impact on turnover rates; several studies, such as Han et al. (2025), indicate that educational attainment plays a significant role in turnover decisions, with work-life balance being a greater consideration than wages. Similarly, in the informal sector, according to Handayani et al. (2017), education has a greater influence on turnover. This view contradicts that of Pratiwi et al. (2020), who found that workers with higher education tend to remain with a company for longer. However, according to Börsch-Supan (1987), worker retention is limited across job types but remains high across regions.

Based on the observed phenomena, the factors influencing staff turnover have been studied by many previous researchers; however, there are discrepancies in the findings regarding whether these factors have a positive or negative impact on turnover. Research indicates that turnover rates increase when influenced by certain factors, such as health insurance (Gruber & Madrian, 2002). Economic conditions and individual characteristics (Sorensen, Eby & Feldman, 2007). Meanwhile, in the informal sector, turnover is more influenced by educational attainment and income (Handayani et al., 2017). Wages, work-life balance and job security also play a role, though this again depends on the educational level of each worker (Han et al., 2025). However, according to Rahmah & Juliannisa (2022), education and wages have a greater influence on labour absorption compared to GDP, which implies that this leads to higher mobility. Meanwhile, turnover decreases when influenced by age and education (Pratiwi et al., 2020). Börsch-Supan's (1987) findings suggest that workers with higher education are less likely to change job types; however, a high level of education hinders labour mobility but increases inter-regional mobility.

Other differing findings regarding the impact of labour mobility, as demonstrated by several researchers, include the following: First, high turnover causes several problems, such as creating uncertainty regarding employment and income, meaning that workers in unstable economic circumstances are more severely affected (Megananda & Triski, 2026). Second, workers lose skills due to constantly moving and having to relearn new skills in new places (Bethmann, 2013). Third, turnover also affects productivity in the region, particularly in rural areas, which drives urbanisation, resulting in uneven economic growth that tends to be concentrated. This contradicts the findings of Le Grand & Tåhlin (2002), who showed that turnover helps to increase wages, although men's wages are higher than women's, thereby creating a wage gap. Similarly, Machsa et al. (2025) demonstrated that turnover, particularly across countries, improves the quality of skills by gaining experience from previous employers.

Based on the background and previous research, the author felt it necessary to conduct a study on the role of education, wages and GRDP in relation to the phenomenon of labour mobility in Indonesia, particularly worker mobility within each province. The reasons why the author chose this topic include the following: Firstly, the steady rise in education levels and wages over the past six years has not been directly proportional to the increasing rate of staff turnover. Secondly, from several empirical studies mentioned above, it is evident that the factors influencing turnover remain a subject of debate, particularly wages and the quality of human resources. Some argue that wages and quality play a role in reducing labour mobility, whilst others contend that they actually increase turnover. Although these studies were conducted in various countries, their concepts and objectives align with the variables the author intends to examine. Research on turnover in Indonesia has also been conducted, but the data used is limited to specific sectors and regions and is predominantly focused on labour absorption rather than turnover. Thirdly, there are also studies that address the same variables as the present research, utilising wages, GRDP and education using panel data from all provinces in Indonesia, such as the study by Fadillah & Kartiasih (2023), though it focuses on open unemployment, Al Farrell & Atmanti (2023) focused on open unemployment, and Rahmah & Juliannisa (2022) focused on labour absorption using panel data across 26 cities/districts in West Java Province.

The novelty of this study lies in the use of the turnover variable, measured by workers who have left their jobs in the past year, as well as the scope of the data used, which covers all provinces in Indonesia. The objective of this study is to examine the extent of the impact of economic growth in each province, wage levels and education on worker turnover in Indonesia; thus, the results of this study are expected to serve as a basis for policy-making, particularly for provinces with high turnover rates, where turnover is consistently associated with a decline in performance—even in the short term—due to increased adjustment costs.

Theoretical Review

Job Search Theory

Turnover is linked to job search theory. In this theory, George Stiger (1961) explains that in the labour market, information regarding job opportunities, working conditions and wages is always biased, whether for employees or employers. Consequently, each individual—whether an employer or an employee—must seek out more accurate information themselves, and this information-seeking process incurs costs known as search costs, which may take the form of material resources, effort, networks, and time. Workers will cease their job search when the benefits derived from the information are smaller than the costs incurred. The search for information regarding the quality of employers and job seekers can be facilitated by involving employment organisations; for example, when a customer wishes to purchase an item but lacks the ability to assess its quality, a supermarket acts as the organisation providing the information the customer needs, as such organisations have already screened all incoming products to ensure they are of high quality. Similarly, in the labour market, there are third parties that have already screened potential workers and companies to find workers or jobs that match their needs, thereby reducing the time and cost of the search. This theory also introduces the concept of reputation, whereby workers with a good reputation will receive higher wage offers, just as high-reputation companies will seek workers of higher quality. When a worker's search reaches the limits of their capabilities and the wage offered is higher than their reservation wage, the worker will accept the offer; conversely, if the minimum wage

offered is still higher than the reservation wage, this remains advantageous for the worker. This condition is referred to as the 'Reservation Wage'.

Human Capital Theory

In Becker's (1989) view, education is an investment in enhancing individual productivity; thus, it is not merely seen as a matter of social status but rather as a means of acquiring skills and the ability to think critically, thereby increasing income and productivity in all economic activities, reflected in the form of higher wages. An individual's decision to attend school can be analysed in the same way as an investment decision in economics, where each individual will weigh the future benefits against the costs incurred during the educational process. The benefits gained are weighed against the costs incurred, including both direct costs such as tuition fees and other expenses, as well as opportunity costs. Opportunity costs are the most significant, as the duration of education means forgoing the opportunity to earn income during that period. Consequently, the cost of education is a combination of direct costs and lost income resulting from not working. Higher costs will be commensurate with higher future earnings, as companies will offer higher wages to workers with advanced skills and abilities. Decisions to pursue further education will vary between individuals, owing to differences in their capabilities, whether in terms of circumstances or opportunities. Individuals with higher capabilities and stable family finances will derive greater benefits from their education, and vice versa. The enhancement of human capital is not limited to formal schooling but also occurs through workplace training, which can take the form of general or specialised training. With this, Becker emphasises that education is a long-term investment in productivity, individual income and the economy as a whole; consequently, at the national level, education must be understood as the most appropriate economic decision and one that will endure over the long term.

Wage Theory

In explaining wage theory, the approach taken is to examine why wages vary, or occupational wage differentials. Rader (1955) explains one reason behind the wage differences that occur in the labour market. Wage differences are not only caused by differences in skills but also by many other factors, such as working conditions and the mechanisms of supply and demand in the labour market within each sector. Every job has different characteristics, thus requiring varying levels of skills and education. The primary factor in wage formation is the point of equilibrium between the supply and demand of labour between employers and job seekers. Employers will offer higher wages if the supply of skilled labour is lower than demand, and skilled workers will receive wages as low as those of unskilled workers if supply exceeds the availability of jobs; thus, this is largely determined by the availability of jobs for skilled workers. In addition to skill levels, working conditions are also a key factor in wage differences. Jobs with higher levels of risk command higher wages, as not all workers are willing to trade risk for pay. Consequently, employers must compensate for the level of risk involved by offering higher wages than those paid to workers in comfortable conditions; these wages serve as compensation for the workers' discomfort. Another factor is labour mobility, which is possible in an open labour market, where significant wage differentials lead to job shifts and increased demand for labour, and vice versa. However, education and skills remain a barrier to labour supply; the high cost of training and the lengthy time required to acquire these skills are short-term factors. In the long term, this situation influences individuals' choices regarding education and skills based on the sector they wish to enter; if a particular sector offers higher wages, individuals will develop specialised skills in that sector, and on the contrary

Solow-Swam Growth Model Theory

The Solow-Swam Growth Model (SSGM) seeks to build upon neoclassical economic growth theory. This theory states that economic growth is not only driven by population growth, the labour force or capital accumulation, but also by technological progress, which must be incorporated as a factor of production in the long run. The assumptions used in the SSGM growth theory are that no two countries have identical economic situations; the reasons for this assumption are as follows: firstly, in aggregate output per capita

(y_t) determined by technology (A_t) and the amount of capital per capita used (k_t) thus forming an equation ($y_t = A_t * k_t$). Secondly, a closed economy without a government, meaning a country's per capita output (y_t) determined by total consumption (c_t) and the per capita savings rate ($s * y_t$) so that it becomes an equation ($y_t = c_t + s * y_t$), means a country's level of consumption (c_t) equivalent to a country's per capita output that is not held as savings ($(1 - s) * y_t$ which forms an equation $c_t = (1 - s) * y_t$. Thirdly, a country's capital stock (k_t) determined by the current capital stock before deduction of the previous year's amount $(1 - \theta) * k_{t-1}$ plus the amount of per capita output that is saved ($s * y_t$), and produces an equation $k_t = (1 - \theta) * k_{t-1} + s * y_t$. This means that the change in per capita capital between the current year and the previous year Δk_t that is equivalent to the per capita output saved in the form of savings in the same year $s * y_t$ which is then reduced by the amount of depreciation from the previous year ($\theta * k_{t-1}$) which yields an equation $\Delta k_t = k_t - k_{t-1} = s * y_t - \theta * k_{t-1}$. In the SSGM model, the break-even point or steady-state level occurs when the rate of depreciation of per capita capital $d * k_L$ equivalent to the savings rate $s * y_L$ whilst the

remainder of the per capita output that has been saved y_L Used for consumption. The factors determining fluctuations in the steady-state level are as follows: 1) Technological advances can boost productivity whilst depreciation remains constant; 2) a reduction in the rate of depreciation (assuming technology remains constant) is achieved through increased output and savings, thereby maximising the break-even point between these three components. 3). An increase in the savings rate, assuming depreciation and output remain constant, means that increased savings reduce public consumption; reduced consumption will in turn lower economic growth or lower the break-even point

Research Methodology

This study employs a quantitative approach using panel data from 34 provinces in Indonesia and a six-year time series spanning 2019 to 2024. Data sources were drawn from the Central Statistics Agency (BPS) reports on the biennial National Labour Force Survey (Sakernas). The variables used are Turnover (Turn), measured by workers who left their jobs in the past year; Education (Edc), representing the average years of schooling; Wage (Wage), representing the minimum wage in each province; and Economic Growth (GRDP), using the economic growth rate of each province. Data analysis was conducted using Eviews 12, involving several stages: data stability tests (root test, cointegration test), model selection tests (CEM, FEM, REM), and finally classical assumption tests (normality, heteroscedasticity, autocorrelation, and multicollinearity). The panel data model used in this study is as shown in Equation 1.

$$MBL_{it} = \alpha + \beta EDC_{it} + \beta WAGE_{it} + \beta GDRB_{it} + \varepsilon_{it} \dots \dots \dots 1$$

Results And Discussion

Results

The results of the data stability test conducted by the researcher are shown in Table 1.

Table 1. Root Test Results of Levin, Lin & Chu t*

Variabel	Statistic	Prob.**
Turn	Turn	0.0000
Edc	Edc	0.0000
Wage	Wage	0.0000
PDRB	PDRB	0.0000

Source: Eviews 12, data processed

Table 1 presents the results of the root test, which indicate that the data used in this study tend to be stable or at the data level, with Prob < 0.05 for all variables. As all data are at the data level, a cointegration test is not required. The next step is the model selection results between the Common Effect Model (CEM), Fixed Effect Model (FEM) and Random Effect Model (REM), as shown in Table 2.

Table 2. Selection of panel data models

Uji Pemilihan Model	Statistic	d.f.	Prob.	Hasil
Cow Test	2.888689	(33,131)	0.0000	FEM
Hausmant Test	70.557538	5	0.0000	FEM
LM test	(0.9225)	(0.000)	0.0000	REM

Source: Eviews 12, data processed

Table 2 shows that the tests conducted—using the Cow Test on the FEM model, the Hausman Test on the REM model, and the Lagrange Multiplier Test (LM test) on the REM model—indicate that two out of the three tests favour the FEM model; this means that the best model for estimating this data is the Fixed Effects Model (FEM). Similarly, when viewed from a comparison of the Weighted Statistics results as shown in Table 3, it is evident that the best model is the FEM

Table 3. Comparison of REM and FEM based on Weighted Statistics

Indikator	REM	FEM	Hasil Terbaik
R-squared	0.920130	0.991990	Fixed Effect Model
S.E. of regression	0.160160	0.135011	Fixed Effect Model
F-statistic	377.8670	429.9418	Fixed Effect Model
Root MSE	0.157308	0.118517	Fixed Effect Model

Source: Eviews 12. Data processed

According to Gujarati (2012), the quality of a regression model can be assessed by examining the highest coefficient of determination and the smallest standard error. Table 3 shows that the FEM model has a greater ability to explain the model, namely 99.1%, a smaller regression standard error of 0.135, greater model significance with a value of 429, and a smaller error in the model of 0.11. Thus, the best model is the FEM model. Having established that the best model is the FEM, a classical assumption test was then carried out. The results of the classical assumption tests indicate that the data are normally distributed with a probability of $0.07 > 0.05$; the data also show no correlation between independent variables, with probability values below 0.80, and are free from autocorrelation based on the Durbin-Watson statistic, which is close to 2 with a value of 2.1493. This model uses EGLS Cross-Section Weights, so a heteroscedasticity test is not required; this is because the EGLS model is used to address heteroscedasticity in the OLS model.

Based on the results of the data testing stages conducted previously and the use of the Estimated Generalized Least Squares (EGLS) estimation method, a model equation was produced.

$$\text{Turn} = 24.994 - 0.050 * \text{Edc} - 3.223 * \text{Wage} - 0.011 * \text{PDRB} + 0.045 * \text{Wage}(-1) * \text{Turn}(-1) - 0.008 * \text{PDRB}(-1) + [\text{CX} = \text{F}] \dots \dots \dots 2$$

Discussion

The average length of education over the last six years across 34 provinces is 9.206 years. Analysis of the estimated data reveals that the effect of education on staff turnover is significant, with a contribution of 0.05085 points. This means that every 1% increase in the average length of schooling, or 1.104 months from the average of 9.2 years, will reduce turnover by 0.05085, equivalent to 1,800 workers out of a total average workforce of 384,921 people who change jobs; thus, this proves that an increase in the length of education in Indonesia is capable of reducing turnover rates. These findings are supported by Börsch-Supan (1987) and Pratiwi et al. (2020), who suggest that education reduces turnover rates because companies offer higher wages commensurate with educational attainment; however, in the Indonesian context, the increase in education levels remains insufficient to maintain job stability due to the persistently high turnover rates. The phenomenon of why education does not have a significant impact on reducing turnover may occur for several reasons, such as: Firstly, the increase in education over six years from 2019 to 2025 is relatively small, amounting to 0.47 years or an average annual growth of 0.078 years, resulting in a very minor effect on changes in workers' capabilities. Secondly, the high proportion of the informal sector dominating economic activity means that education is not the most pressing need. Thirdly, there is a mismatch between the educational curriculum and the skills required by the labour market, leading to low wages and encouraging workers to switch to other jobs. Fourthly, economic factors are more dominant, particularly regarding wage disparities across sectors and available opportunities, causing workers to prioritise economic gains over job stability.

The role of wages in job mobility is significant, with a 1% wage increase reducing turnover by 3,223 points. This means that when wages increase by 1%—equivalent to Rp 27,482 from an average wage of Rp 2,748,217—it reduces the turnover rate by 12,405 people. BPS data shows that from 2019 to 2024, wages increased by Rp 650,000, or 23.65%. If wage growth over the past 6 years is 23.65%, it is predicted that 293,419 people have remained in their jobs over the last 6 years; this demonstrates that wages have a significant influence on turnover. The wage increases currently granted to workers are capable of enhancing job satisfaction, particularly among workers earning above-average wages, as the economic benefits derived from their current employment have increased, leading to a higher risk of them intending to move on. These findings are supported by previous research conducted by Liu (2019), Peticara (2004) and Pavlopoulos et al. (2007), which indicates that wages are the most critical factor influencing turnover; employees are likely to change jobs when their current wages fall below the government-set wage standard. There are several reasons why workers on fixed wages tend to remain in their current jobs, particularly following a pay rise. Firstly, a fixed pay rise provides workers with a sense of comfort and economic stability; consequently, when seeking alternative employment, workers face the risk of uncertainty. Secondly, the characteristics of the workforce in developing countries such as Indonesia tend to favour securing their current job over attempting to develop a career in another sector.

On the other hand, regional economic growth is another variable influencing staff turnover. If we examine the statistical data published by the Central Statistics Agency (BPS) from 2019 to 2024, the average GRDP growth rate for each province stands at 3.83%; this period includes years when the economy was in both expansion and contraction. The regression results indicate that GRDP plays a significant role in reducing turnover by 0.01119 points. This means that if economic growth increases by 1%, it will reduce turnover by 4,280 people out of a total average turnover of 384,921 people. Meanwhile, GDP growth in the previous year (GDRB-1) had a value of -0.00837 points, contributing to a reduction in turnover this year of 3,200 people; this implies that GDRB-1 represents an indirect effect from the previous year that impacts the current period. These results indicate that while GRDP plays a significant role, it is not the primary factor in retaining workers in their jobs; however, its impact is still greater than that of education, which is only able to retain 1,800 workers. The phenomenon of GRDP's role in turnover can be explained by the benefits resulting from GRDP growth, such as increased productivity and investment, leading employers to retain current workers and provide additional incentives. However, when GRDP growth declines, turnover rates increase, particularly from the formal to the informal

sector (Amoah, 2024). The coefficient derived from the statistical results is very small, at 0.010, meaning that GRDP has only a minor influence on turnover compared to other variables such as wages, etc. This result aligns with the findings of a study conducted by Kali & Liu (2024), which showed that economic growth strengthens the labor market; when market conditions are stable, the likelihood of job-hopping tends to be low. This phenomenon occurs in many developing economies, although a decline in turnover occurs in the short term (Andabayeva et al., 2024). Both of these studies align with labor market conditions in Indonesia, which is a developing country characterized by a dominant informal sector and limited job opportunities. Although there are studies that contradict these findings, such as McGinley, Dogru & Sharma (2024), economic growth creates new jobs and increases turnover; however, their research focuses primarily on developed countries with abundant job opportunities and flexible labor markets. Therefore, it is not appropriate to apply these findings to Indonesia, a developing country.

On the other hand, the results of the regression analysis also reveal a dynamic (lagged) interaction between the Wage-1 and Turn-1 variables. Specifically, if wages in the previous year were high and were followed by high labor mobility in the same year, this would lead to the same prediction: that high wages will continue to increase labor mobility in the current year. For example, in East Java Province, the number of worker movements in 2021 was 2.7 million people and increased in 2022 to 3.2 million people; although wages also increased by 8.5% in the same year, mobility continued to rise, meaning that provinces with consistently high mobility, even when wages are increased, reflect an indication of dependence on the historical labor force structure that has been established based on previous mobility patterns.

Overview of Turnover in Each Province

Based on the results of the previous model estimation, it is evident that there are differences in the characteristics of each province regarding their role in turnover, where variables such as wages, GRDP, and education cannot fully explain their role in turnover. The results shown in Figure 4 illustrate the magnitude of turnover in a given province compared to the national average, as calculated by the model presented in Equation 2.

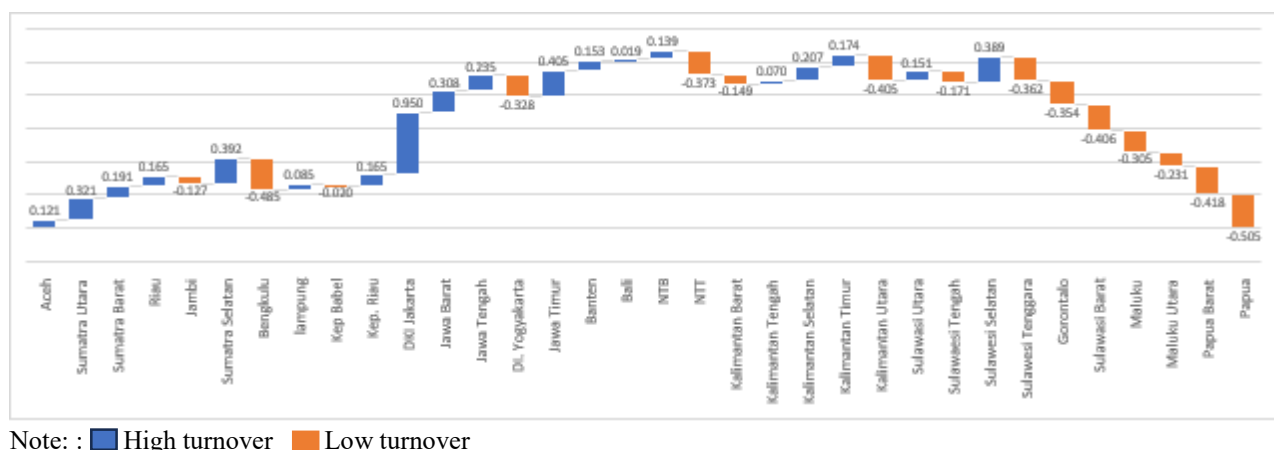


Figure 4. Turnover by Province

Figure 4 shows that the highest turnover occurs on islands with the highest levels of industrialization and urbanization. Furthermore, DKI Jakarta is the province with the highest turnover rate, at 0.950. The high turnover in DKI Jakarta is influenced by its status as the national administrative and economic center, encompassing trade, industry, finance, and other services; these conditions create a highly flexible labor market and enable increasingly intense turnover. The diverse sectors in DKI Jakarta, combined with high urbanization, result in a wider range of job options and greater availability of opportunities.

A similar factor applies in East Java Province (0.405). Major cities such as Surabaya, Malang, and others serve as economic hubs in central Indonesia, generating a wide variety of jobs in sectors such as industry, trade, services, the informal sector, manufacturing, and others. This diversity creates cross-sectoral job options, and a flexible labor market structure keeps the cost of job mobility low. This factor is what drives the high mobility rate in East Java. Similarly, in South Sumatra (0.92), the volatile nature of the natural resource sector encourages workers to seek alternatives. The city of Palembang, as a center of government and the economy, creates opportunities in the service and trade sectors. Thus, turnover occurs as a response to economic conditions involving natural resources, services, and trade. South Sulawesi (0.389), with its substantial informal and logistics sectors, means individuals are not overly tied to a single job, resulting in a high worker mobility rate compared to West Java. Furthermore, West Java (0.308) ranks as the fifth province with the highest turnover rate. Although West Java is one of Indonesia's largest economic hubs, characterized by industrialized regions such as Bekasi, Karawang, and Purwakarta—which serve as the country's largest manufacturing centers—the

economic structure dominated by this sector tends to be stable, particularly in the manufacturing sector. This sector features a rigid labor structure marked by fixed-term contracts, career ladders, and a relatively stable production system. This means that the low mobility in West Java as an industrial center, when compared to Jakarta, East Java, and even South Sulawesi, indicates that West Java has a more stable and structured economic character, as well as a labor market that is not very flexible.

The lowest turnover rates tend to occur in eastern Indonesia compared to the national average. Papua Province has the lowest turnover rate, with a value of -0.505, meaning that workers in this province have remained in the same sector or business for the past several years. Factors contributing to workers' retention in this province may include limited infrastructure, economic constraints, and restricted access to education, leaving individuals with few opportunities to change jobs. These factors are also present in West Papua, Maluku, and North Maluku, which are island regions. Meanwhile, in Gorontalo, West Sulawesi, East Nusa Tenggara (NTT), North Kalimantan, Bengkulu, and Southeast Sulawesi, low turnover is attributed to these regions being developing areas reliant on natural resources, a population tendency toward agriculture and mining—which dominate the economy—and limited options in other sectors. In contrast, in the Special Region of Yogyakarta (DIY), the relatively low mobility rate is due to job stability and a good fit between workers and their roles. The dominance of the service, tourism, and education sectors creates stable career paths based on specialization in specific fields, allowing workers to utilize their respective skills.

Thus, in the context of labor turnover, the conditions explaining why provinces in Eastern Indonesia, such as Bengkulu and others, tend to have low turnover reflect “constraint-driven immobility”—meaning that the low turnover is not caused by individual capabilities but rather by limited job options available in the local labor market, resulting from development disparities among provinces. As shown in Figure 4, provinces with more advanced economic structures tend to have higher labor mobility compared to provinces with less developed economies that are focused on the natural resource sector.

Conclusion

Based on the research findings and discussion outlined above, it is evident that wages have the greatest impact on reducing turnover by 34,100 people, followed by the GRDP variable with 4,280 people; the previous year's GRDP contributed to reducing turnover by 3,200 people compared to the current year. Meanwhile, education is the variable that contributes the least to reducing turnover, affecting 1,800 people. Although the roles of these three variables are significant, they remain relatively low when compared to the average turnover of 384,921 people.

In general, the model indicates that education, wages, and GRDP can reduce turnover rates; however, the distinct characteristics of each province lead to varying impacts on migration. Provinces with more diversified economic structures, advanced economies, and a wide range of job opportunities experience persistently high migration rates, such as West Java, East Java, Jakarta, South Sumatra, Southeast Sulawesi, and others. Conversely, provinces with limited economic structures and homogeneous job markets result in low turnover rates, such as Bengkulu, Yogyakarta Special Region, and several provinces in Eastern Indonesia. Additionally, the migration patterns and wages from the previous year influence migration and wage conditions in the following year.

Recommendations

To enhance labor market stability, policymakers need to prioritize worker protection and welfare, as well as ensure that the education system aligns with the needs of the industrial sector so that each economic sector operates with workers whose skills match the requirements of their roles.

Limitations

This study is limited in that the data covers only national-level information. To achieve more comprehensive results, future research could incorporate local economic factors specific to each province, such as the number of industries, labor migration, and other relevant variables.

References

- Al Farrell, I. M., & Atmanti, H. D. (2023). Analisis pengaruh tingkat upah, pertumbuhan ekonomi, kesempatan kerja, dan pendidikan terhadap tingkat pengangguran terbuka (studi kasus 34 Provinsi di Indonesia). *BISECER (Business Economic Entrepreneurship)*, 6(2), 128-138. <https://doi.org/10.61689/bisecer.v6i2.431>
- Amoah, D. K. (2024). How different theories of development address the relationship between the urban informal economy and poverty in the labour market. *Discover Global Society*, 2(1), 104. <https://doi.org/10.1007/s44282-024-00131-y>
- Andabayeveva, G., Movchun, V., Dubovik, M., Kurpebayeva, G., & Cai, X. (2024). Labor market dynamics in developing countries: analysis of employment transformation at the macro-level. *Journal of Innovation and Entrepreneurship*, 13(1), 65. <https://doi.org/10.1186/s13731-024-00417-0>

- Bauer, T. K., Bachmann, R., & David, P. (2010). Labor Market Entry Conditions, Wages and Job Mobility. <https://hdl.handle.net/10419/37348>
- Becker, G. S. (1989). *Human capital: a theoretical and empirical analysis, with special reference to education*. Chicago: University of Chicago Press.
- Bethmann, A. (2013). Occupational change and status mobility: the detrimental effects of unemployment and the loss of occupation specific human capital. *Journal for Labour Market Research*, 46(4), 307-319. <https://doi.org/10.1007/s12651-013-0147-9>
- Börsch-Supan, A. H. (1987). The Role of Education: Mobility Increasing or Mobility Impeding?.
- Buhai, I. S. (2025). Wage Dispersion, On-the-Job Search, and Stochastic Match Productivity: A Mean Field Game Approach. *arXiv preprint arXiv:2512.07024*.
- Fadillah, K., & Kartiasih, F. (2023). Pengaruh COVID-19 dan Perpindahan Penduduk Terhadap Tingkat Setengah Pengangguran di Indonesia. *Jurnal Kependudukan Indonesia*, 18 (2), 217–236. <https://doi.org/10.55981/jki.2023.2037>
- Ferrara, M. (2025). Solow-Swan Model and Growth Dynamics: moving forward. *Decisions in Economics and Finance*, 1-17. <https://doi.org/10.1007/s10203-025-00543-8>
- Gruber, J., & Madrian, B. C. (2002). Health insurance, labor supply, and job mobility: A critical review of the literature.
- Gujarati, D. N. (2012). *Basic Econometrics* 4th ed.
- Han, X., Himmelstern, J., & Vanheuverlen, T. (2025). The contribution of work values to early career mobility. *Research in Social Stratification and Mobility*, 95, 100996. <https://doi.org/10.1016/j.rssm.2024.100996>
- Handayani, G. A., Priyagus, P., & Amalia, S. (2017). Analisis perpindahan tenaga kerja pada sektor informal. *Jurnal Ilmu Ekonomi Mulawarman (JIEM)*, 2(4). <https://doi.org/10.29264/jiem.v2i4.1768>
- Kali, R., & Liu, A. Y. (2024). Labor market power and worker turnover. *European Economic Review*, 163, 104701. <https://doi.org/10.1016/j.euroecorev.2024.104701>
- Le Grand, C., & Tählin, M. (2002). Job mobility and earnings growth. *European sociological review*, 381-400. <https://www.jstor.org/stable/3559543>
- Li, J. (2013). Job mobility, wage dispersion, and technological change: An asymmetric information perspective. *European Economic Review*, 60, 105-126. <https://doi.org/10.1016/j.euroecorev.2013.01.008>
- Liu, K. (2019). Wage risk and the value of job mobility in early employment careers. *Journal of Labor Economics*, 37(1), 139-185. <https://doi.org/10.1086/698898>
- Machsa, A. W., Rohmi, A. M., Rahayu, R. N., Islamiyah, Z., Syaifudin, A., & Sriyono, S. (2025). The effect of global labor mobility on human resource competency. *COSTING: Journal of Economic, Business and Accounting*, 8(3), 5094–5103.
- Mcginley, S., Dogru, T., & Sharma, A. (2024). The effect of job abundance on tourism employee turnover. *International Journal of Hospitality Management*, 119, 103718. <https://doi.org/10.1016/j.ijhm.2024.103718>
- Megananda, T. B., & Triski, D. S. (2026). Employment Vulnerability And Financial Well-Being In Indonesia: Insights From A Systematic Literature Review. *International Journal of Management and Business Economics*, 4(2), 127-136. <https://doi.org/10.58540/ijmebe.v4i2.1426>
- Pratiwi, E. D., Ashar, K., & Syafitri, W. (2020). Dampak kemiskinan terhadap pola perpindahan tenaga kerja antarsektor di Indonesia. *Jurnal Kependudukan Indonesia*, 15(1), 1-18. <https://doi.org/10.14203/jki.v15i1.473>
- Rahmah, A. M., & Juliannisa, I. A. (2022). Pengaruh Tingkat Pendidikan, Upah Minimum, Dan PDRB Terhadap Penyerapan Tenaga Kerja Di Kabupaten/Kota Provinsi Jawa Barat. *Ikraith-Ekonomika*, 5(3), 246-254. <https://doi.org/10.37817/ikraith-ekonomika.v5i3.2460>
- Reder, M. W. (1955). The theory of occupational wage differentials. *The American Economic Review*, 45(5), 833-852. <https://www.jstor.org/stable/1821382>
- Stigler, G. J. (1961). The economics of information. *Journal of political economy*, 69(3), 213-225. <https://doi.org/10.1086/258464>
- Woods, T., Nguyen, D., Schneider, D., & Harknett, K. (2024). Labor market pathways to job quality mobility in the service sector: Evidence from the “Great Resignation”. *Research in Social Stratification and Mobility*, 92, 100962. <https://doi.org/10.1016/j.rssm.2024.100962>