



Job Status and Productivity Imparity: Lessons Learned from the Indonesian Workers

Padang Wicaksono^{a,*} , Vindaniar Yuristamanda Putri^b , and Novi Utami^a 

a. Department of Economics, Faculty of Economics and Business, University of Indonesia, Depok, Indonesia.

b. Department of Finance and Banking Administration, Vocational Education Program, University of Indonesia, Depok, Indonesia.

* Corresponding author.

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Abstract

This study analyzes the effect of workers' transition from contract to permanent employment status on work productivity. Contract employment is a non-standard employment relationship that is prevalent in many countries, including Indonesia. Contract workers generally have weaker work protection guarantees and lower wages than permanent workers. Consequently, most contract workers are motivated to perform at their best to be appointed as permanent workers. The Indonesia Family Life Survey (IFLS) waves 4 and 5 provide data on employment status transitions, which can serve as a proxy for changes in productivity. The unit of analysis in this study is workers aged 22-64 years in IFLS 5 who were permanent employees at that time. The standard Tobit regression results indicate that the transition from contract to permanent status was negatively associated with the productivity of permanent workers in 2014. The effect of changing employment status becomes smaller after being controlled by individual and job characteristics variables. We find evidence that the controlled variables—education, health status, stress level, job satisfaction, wage, and business sector—are significantly associated with workers' productivity in Indonesia. Good health conditions can reduce the likelihood that workers will not attend work. The empirical findings in this study indicate that the most important thing for workers is not their employment status but the company's sustainability and financial security for the workers themselves in the long term.

Keywords: employment status, household data, IFLS, labor productivity, Tobit regression.

JEL Classification: C810, J240.



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Introduction

Researchers have long recognized the relationship between employees' productivity and their employment status in the company (Al and Anil, 2016; Conway and Briner, 2002; Gebauer, 2019). The coexistence of both temporary and permanent employment arrangements in labor markets serves important functions. In many contexts, temporary or contract workers are defined as those with tenure of less than three years, whereas permanent workers typically have three or more years of service. Permanent workers have a lower risk of termination of employment because they have more vital legal protection than temporary employees (Bradley et al., 2014).

For decades, many OECD countries have significantly increased the use of temporary work. In Spain, the proportion of temporary workers increased from roughly 15% in the mid-1980s to 34% in 2006 and 24% in 2014. In the US, the total number of those employed by the THS (Temporary Help Services) agency more than doubled from 1.2 million to 2.6 million between 1990 and 2006. Moreover, Chile recorded 30%, Spain 25%, and Germany 15% for contract workers in 2015 (Aleksynska and Muller, 2015; Ferreira et al., 2018; Gebauer, 2019).

Non-standard employment statuses, such as contract work, are not prohibited as they are regulated by law. However, contract employees often face high job insecurity, low access to welfare insurance, and limited benefits from the company (Basu et al., 2021; Lisi, 2013). Moreover, contract workers are more vulnerable to unilateral termination of employment. Multiple studies show that legal protection for contract labor makes workers try harder for fear of losing their jobs. Consequently, contract workers have higher work motivation scores than permanent workers (Allan and Sienko, 2011; Bradley et al., 2014; García Mainar et al., 2018). The precarious nature of contract work may motivate employees to perform well in hopes of securing a permanent position, leading them to value their current role more highly. A panel study found that changing employment status from contract to permanent workers increased absenteeism (Bradley et al., 2014).

According to data from the Asian Productivity Organization (APO) (2018), Singapore's labor productivity ranks first in Asia at US\$131.9 thousand per worker. Malaysia's and Thailand's worker productivity was US\$56.4 thousand and US\$28.3 thousand per worker, respectively. However, Indonesia's labor productivity in 2016 was US\$24.9 thousand, and Indonesia's human resources ranked in 65th position out of 130 countries, below the Human Resources (HR) ratings of Malaysia, Thailand and Vietnam (The Ministry of National

Development Planning Republic of Indonesia, 2020). Meanwhile, from a competitiveness standpoint, The Global Competitiveness Report 2017-2018 notes that Indonesia's competitiveness ranking is ranked 36 out of 137 countries (Scwab, 2018). This represents an improvement from its 41st ranking in 2016-2017. Even though the competitiveness of Indonesian workers has increased globally, their productivity is still lower than in several ASEAN countries such as Singapore, Malaysia, and Thailand (Asian Productivity Organization, 2018). Thus, increasing workers' productivity in Indonesia must remain the focus of development to compete globally.

Low productivity is closely related to Human Resources (HR) quality. A key issue is that graduates' capacities and skills sometimes do not align with the demands of the job market (The Ministry of National Development Planning Republic of Indonesia, 2020). However, elementary school graduates still dominate Indonesia's workforce. According to The Ministry of National Development Planning of the Republic of Indonesia (2020), improving the quality of human resources can increase worker productivity and the nation's competitiveness. Human resources are considered the most important and valuable organizational asset (Afsharian et al., 2013; Omori and Bassey, 2019).

Labor productivity is closely related to demographic bonuses, which bridge economic and demographic concepts (Adioetomo et al., 2018). Currently, Indonesia is undergoing a demographic transition process, which causes the age structure of the productive age population (15-64 years) to be larger than the unproductive age population (0-14 years and 65 years and over). The low age dependency rate becomes an opportunity for demographic bonuses. The demographic dividend can yield significant benefits if harnessed effectively, but it can also pose substantial challenges if mismanaged. Adioetomo et al. (2018) state that a large working-age population will increase productivity, encouraging economic growth. The success of taking advantage of the demographic bonus can be reflected in rising individual standards of living.

Labor is the principal capital in the development process. From a micro perspective, increasing working hours, training, education, income, job security guarantees, and comfortable working conditions can encourage workers to be more productive (Adioetomo et al., 2018). Providing higher career promotions to successful workers can also encourage workers to try to achieve better and more effective performance (Afsharian et al., 2013).

Changes in worker status from contract workers to permanent workers automatically increase the level of legal protection for workers (Bradley et al.,

2014). A worker with a non-standard working relationship, in this case, a contract worker, tends to have lower access to income and social security and is vulnerable to job uncertainty (International Labor Organization, 2016). Contract workers are usually used to screen candidates for a job, with a probationary period for a permanent position after the contract ends. Respectively, the contracts can be considered as 'stepping stones' that facilitate contract status to permanent (Kabátek et al., 2023).

Contract workers can generally be terminated by not extending the work contract. On the other hand, it is tricky for permanent workers to be dismissed unilaterally (Bradley et al., 2014). Referring to Law No. 13 of 2003 about Manpower in Indonesia (2003), employers must provide severance pay when a permanent worker is terminated. Thus, the status of permanent workers is relatively secure compared to contract workers. Bradley et al. (2014) found that changing employment status from contract workers to permanent workers increased absenteeism. Employee absence indicates employee discipline, which can ultimately reduce performance. Another study found that effort was measured by contract workers' willingness to work overtime (Engellandt and Riphahn, 2005). Research by Engellandt and Riphahn (2005) found that workers with contract status are more likely to work unpaid overtime compared to permanent workers.

Research on labor productivity in Indonesia, in general, is still limited to the factors that affect work productivity and within the scope of a particular company. Research on the effect of legal protection on worker productivity remains limited in the Indonesian context. Therefore, this study aims to fill a research gap in the study of labor productivity in Indonesia by examining the transition of workers' status from contract to permanent workers. Based on the background and problems above, the research question posed in this study is whether the transition from contract workers to permanent workers affects worker productivity in Indonesia.

Literature Review

Employee Status Transition and Worker Productivity

The primary distinction between permanent and contract workers lies in the legal protection workers receive. Regulations governing employment contracts in Indonesia are stipulated in Law No. 13 of 2003 concerning Manpower. Permanent workers enjoy stronger legal guarantees compared to their contract counterparts. Permanent workers generally receive higher incomes, better social security benefits, stronger protection against unilateral dismissal, and are guaranteed a

minimum wage (De Cuyper et al., 2008). In contrast, contract workers typically have limited access to job training, as their long-term employment is not assured (Arulampalam et al., 2004; Ferreira et al., 2018; Ongera and Juma, 2023). Despite these disadvantages, individuals may still opt for non-permanent employment. Ongera and Juma (2023) argue that workers accept temporary positions as an alternative when permanent opportunities are scarce, often with the long-term hope of being appointed to a permanent role.

Previous literature indicates that transitioning from contract to permanent employment status is associated with higher absence rates. In Australia, the absence rate for a worker promoted to permanent employment increases by 1.32 hours per quarter for male workers and 2.35 hours per quarter for female workers. Contract workers often worry that their contract may be terminated or not renewed unilaterally by the employer; however, this concern diminishes upon promotion to permanent status (Bradley et al., 2014). Mainar et al. (2018) conducted research in Spain by comparing actual working hours over one week with regular working hours obtained from the Longitudinal Spanish Labor Force Survey (LSLFS) between 1996 and 2008 for private sector workers. The results showed an increase in worker status from contract to permanent workers and an increase in absence from work by 5.3 percentage points or 0.3 working days per week. Another study found that the rate of absenteeism rises with greater job protection. This suggests that an improvement in employment status, which brings stronger legal safeguards, makes workers feel more secure from the risk of job termination (Chirumbolo and Areni, 2005; Ichino and Riphahn, 2005). These findings collectively indicate that enhanced legal protection is negatively associated with worker attendance levels.

Another study found that contract workers in the United States often outperform permanent workers, particularly in departments offering clearer pathways to permanent employment. However, permanent workers may exhibit lower motivation, which Allan and Sienko (2011) attribute to job boredom. The willingness of contract workers to work overtime without pay also indicates a higher probability than that of permanent workers. Contract workers are more willing to sacrifice family time for office work (Engellandt and Riphahn, 2005). Pradhan and Jena (2017) argued that employee discipline is measured by attendance and could be a proxy for an employee's performance.

Other Variables Impact Employees' Productivity

Another variable that influences worker productivity is gender. The theory of the division of household labor posits that women have traditionally devoted most of

their time to childcare and other domestic responsibilities. However, men are mainly responsible for hunting, farming, war, and other activities in the labor market (Becker, 1993). A woman who enters the labor market will experience role dualism. Thus, a woman tends to have lower work productivity. Hassan and Ogunkoya (2014) note differences in certain characteristics, with men often scoring higher in measures of physical activity and women in verbal skills. Several studies report that men receive higher performance evaluations than women in office settings (Omori and Bassey, 2019; Ueda and Ohzono, 2013). Men and women also differ in their willingness to work overtime (Engelland and Riphahn, 2005).

Marriage is a long-term commitment between a man and a woman (Becker, 1993). Marital status can affect worker productivity through psychological conditions experienced by a person and various domestic issues in the household (Oselumese et al., 2016). Several studies have shown that marital status has an inconclusive effect on worker productivity. Hassan and Ogunkoya (2014) found that marital status positively affects employee performance. On the contrary, Padmanabhan and Magesh's (2016) study shows that unmarried people are more efficient at work than married people. Regarding employee effort in terms of absenteeism, workers with divorced status have higher absenteeism than those with single or married status (Wee et al., 2019).

Education is another variable used as a measuring tool (signaling) of workers' productivity and expertise (Borjas, 2016). Companies, as employers, typically look at a person's educational records in recruiting prospective workers. Individuals with higher education are generally perceived as more productive (Todaro and Smith, 2014). In the theory of human capital development, education is an investment whose benefits can be obtained by increasing a person's productivity in the future (Psacharopoulos and Patrinos, 2018). Higher productivity among workers with higher education stems from their ability to learn and understand new things related to their work. Thus, education positively influences worker productivity (Omori and Bassey, 2019). Another study found that more educated workers had lower rates of absenteeism (Wee et al., 2019).

Investment in human capital occurs not only through education but also through health (Becker, 1994). Grossman (1972, as cited in Tompa, 2002) emphasizes that improvements in both education and health can enhance productivity in labor and non-labor markets. Healthier individuals tend to exhibit higher work productivity owing to greater energy and better mental and physical well-being (Bloom and Canning, 2000). Boles (2004) measures worker

productivity by counting absences due to illness. The health risks studied included body mass index, cholesterol, high blood pressure, diabetes, smoking behaviour, alcohol consumption, and others. As a result, workers with high health risks are strongly associated with higher productivity loss (Boles et al., 2004).

Stress is an individual's reaction to pressure or demands they encounter (Ahmed and Ramzan, 2013). Stress at work has a strong negative relationship with worker productivity. Stress caused by workload could reduce worker productivity due to a loss of enthusiasm and motivation (Donald et al., 2005). Moderate stress can have positive effects on performance (eustress), but excessive stress becomes detrimental to productivity (Ahmed and Ramzan, 2013). Another job characteristic influencing performance is job satisfaction (Shaju and Subhashini, 2017). Job satisfaction fosters higher motivation and morale among employees (Becker, 1994). Employees who are satisfied with their current jobs will perform better than those who are dissatisfied.

The work environment encompasses both the physical and non-physical setting in which work is performed. The physical work environment can be air temperature, noise, office space, and other elements of the environment. The non-physical environment includes relationships with colleagues and supervisors, as well as the prevailing organizational culture. Several previous studies found that work environment conditions, both physically and non-physical, affect worker productivity (Adenekan and Nwoko, 2022; Ghafoor Awan and Tahir, 2015; Hameed et al., 2014). A high-quality work environment can boost productivity by fostering comfort and well-being. Consequently, work output becomes more optimal. In this study, the work environment is proxied through the business sector.

Based on the theoretical review and empirical basis presented, the hypothesis in this study is that the transition from contract to permanent workers was negatively associated with worker productivity in 2014. In order to answer the hypothesis, several variables affect a person's work productivity, with the transition of workers' status associated with increased legal protection for workers as the primary variable. Furthermore, worker productivity will be controlled by individual characteristics and job characteristics. Therefore, the following is the conceptual framework for this study:

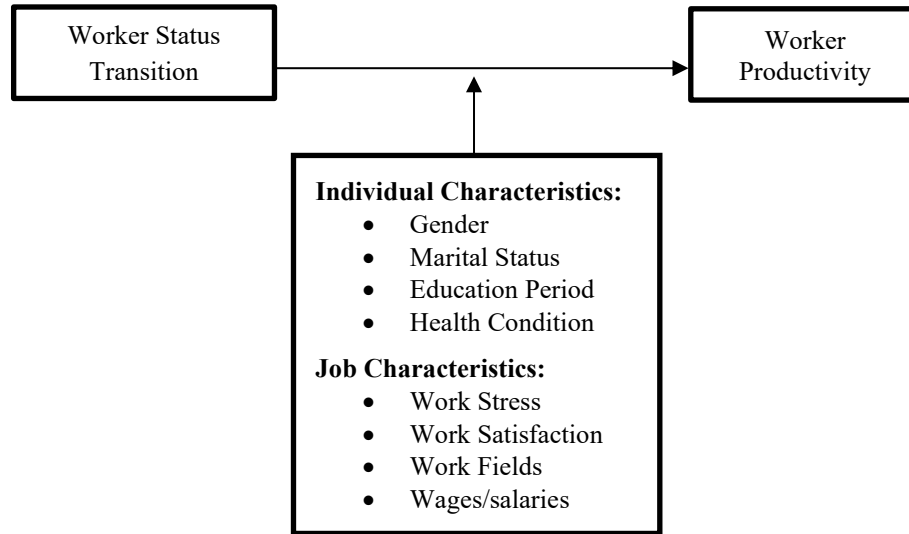


Figure 1. The Conceptual Framework

Source: Research finding.

Methods and Materials

The data were extracted from the Indonesian Family Life Survey (IFLS) waves 4 and 5, conducted in 2014. IFLS was conducted by the RAND Corporation in collaboration with Survey Meter. Ethical approval was obtained from the RAND Institutional Review Board in the United States and the University of Gadjah Mada Institutional Review Board in Indonesia (Langlois et al., 2023). IFLS is the only panel data that can describe the long-term characteristics of respondents in Indonesia. IFLS provides data on household life in Indonesia, including socioeconomic and health indicators at the individual, household, and community levels (RAND, 1994; Strauss et al., 2016).

Respondents are 22 to 64 years old and work with the status of workers/ employees/ permanent employees during the survey. After matching data from IFLS 4 and 5, the final sample consisted of 3,016 respondents. Data from the two waves were matched to track the primary variable—the transition in worker status—between 2007 and 2014. The study also incorporates data on employment history, measures of worker productivity, and a range of individual characteristics. The following is a flowchart for selecting the research unit of analysis:

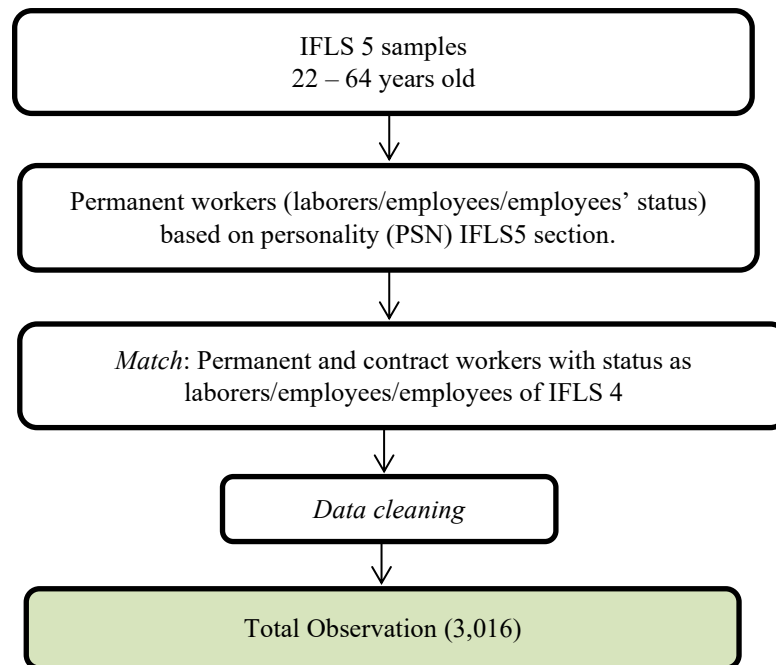


Figure 2. Unit of Analysis Selection Process

Source: Research finding.

Variables

Tangen (2005) argues that productivity is a multidimensional concept whose definition varies depending on the context. Worker productivity, the dependent variable in this study, was measured using a self-report instrument (Donald et al., 2005; Nda & Fard, 2013). This study employs three indicators of worker productivity: work effectiveness (assessed through task completion), discipline (or tendency toward laziness), and work efficiency. Work effectiveness and efficiency are indicators of a productive worker (Hairo and Martono, 2019; Nda and Fard, 2013). In IFLS, worker productivity was assessed using a Likert scale ranging from 1 (very poor) to 5 (excellent).

The primary independent variable captures the transition in a person's employment status from 2007 to 2014, specifically moving to permanent worker status by 2014. A value of 1 was assigned to individuals who were contract workers in IFLS 4 but had transitioned to permanent workers by IFLS 5. Individuals who did not experience a change in employment status were categorized as stayers (coded 0). The definition of contract workers in this study refers to workers with less than three years of service, and permanent workers are workers who have worked for three years or more under the provisions of the Indonesian Labor Law Act. 13 of 2003 (Indonesian Labor Law about Manpower, 2003).

Control variables are categorized into individual characteristics and job characteristics. Individual characteristics include gender, marital status, education level (assuming the respondent never missed a class), and health status. On the other hand, work characteristics consist of job satisfaction, wages/salaries, business sector, and period of employment. Definitions for all variables—dependent, independent, and control—are provided in Appendix A.

Table 1. Characteristics of the Research Sample based on the Independent Variables

Characteristic		Total	Percentage
(1)		(2)	(3)
Worker Status Transition	<i>Stayer</i>	2.066	68,48
	<i>Mover</i>	951	31,52
Gender	Male	1.950	64,63
	Female	1.067	35,37
Age	<30 years old	424	14,05
	30 – 45 years old	1.705	56,51
	> 45 years old	888	29,43
Marital Status	Single	243	8,05
	Married	2.692	89,23
	Even Married	82	2,72
Education Level	Low	598	19,82
	Middle	1.431	47,43
	High	988	32,75
Health Status	Not Healthy	2.426	80,41
	Healthy	591	19,59
Job Stress Level	No Stress	1.405	46,57
	Always Stress	1.612	53,43
Job Satisfaction	Not Satisfied	392	12,99
	Satisfied	2.625	87,01
Wages/Salaries Categories	Low	1.236	40,98
	Middle	1.187	39,36
	High	593	19,66
Business Sector	Primary	243	8,06
	Secondary	778	25,80
	Tertiary	1.995	66,15
Period of Employee	<10 years	1.371	45,44
	10-19 years	1.002	33,21
	>20 years	644	21,35
Total		3.016	100,00

Source: Research finding.

The majority of respondents (56.51%) were aged between 30 and 45. Workers in this age range typically possess peak physical capabilities relative to younger or older cohorts. Male workers constituted 64.63% of the sample, outnumbering female workers. This finding aligns with the theory of the division of labor in the household, which states that working to earn a living and meet the family's financial needs is a man's main task (Becker, 1993). Regarding marital status, married individuals accounted for 89.23% of the sample.

Job characteristics are closely related to the productivity of a worker. Concerning job-induced stress, nearly half of the respondents (46.57%) reported that their work did not cause any stress. The remaining 53.43% reported experiencing work-related stress. A large majority (87.01%) expressed job satisfaction, while only 12.99% reported dissatisfaction.

Salaries per month are classified into three categories: low (less than or equal to 1.5 million Rupiah), medium (more than 1.5 to 3.5 million Rupiah), and high (more than 3.5 million Rupiah). Most respondents (66.15%) were employed in the tertiary (service) sector. Consequently, approximately 80% of respondents earned a monthly wage of 3.5 million Rupiah or less. Regarding job tenure, the largest proportion of respondents (45.44%) had worked for less than ten years.

Data Analysis

The analysis in this study proceeds in two stages: descriptive and inferential. Descriptive analysis provides an overview of the research sample and the bivariate relationships between variables. Furthermore, the inferential analysis aims to determine the effect of the transition of employment status on worker productivity. To address the research question, Tobit regression was employed. Tobit regression is a censored regression model used when the dependent variable is subject to restrictions (Amemiya, 1985). This model was deemed more appropriate for the dataset in this study than ordinary least squares (OLS) regression (Lamesgen et al., 2022).

The dependent variable is a productivity score bounded between 3 and 15 points. Such censoring alters the distribution of the observed data. This value limit censors the normally distributed population when the original population is normally distributed. The Tobit standard regression model can be used if the dependent variable is continuous and limited. Worker productivity in this study is measured on a continuous scale, with a limited range of scores. The Tobit regression model for estimating worker productivity is specified as follows:

$$prod_i = \beta_0 + \beta_1 X_i + \beta_2 Y_i + \beta_3 Z_i + u_i \quad (1)$$

where $prod_i$ is the score of worker productivity in 2014 and X_i is a vector of variables that indicate individual characteristics in research such as gender, marital status, education period, and health condition. Y_i is a vector variable that shows job characteristics such as stress, satisfaction, wages/salaries, and business sector. Meanwhile, u_i is an error term. The regression model that will be formed in this study is as follows:

Model 1. The Effect of worker status transition on worker productivity in 2014

$$prod_i = \beta_0 + \beta_1 statrans + \varepsilon \quad (2)$$

Model 2. The effect of worker status transition and individual characteristics on worker productivity in 2014.

$$prod_i = \beta_0 + \beta_1 statrans + \beta_2 sex + \beta_3 marital_1 + \beta_4 marital_2 + \beta_5 education + \beta_6 health + \varepsilon \quad (3)$$

Model 3. The Effect of worker status transition, individual characteristics, and job characteristics on worker productivity in 2014

$$prod_i = \beta_0 + \beta_1 statrans + \beta_2 sex + \beta_3 marital_1 + \beta_4 marital_2 + \beta_5 education + \beta_6 health + \beta_7 stress + \beta_8 jobs + \beta_9 salary + \beta_{10} sector_1 + \beta_{11} sector_2 + \varepsilon \quad (4)$$

Results and Discussions

Description Analysis

The analysis included 3,016 workers aged 22–64 in 2014, whose data were successfully matched with their records from the 2007 IFLS wave. Data from IFLS 5 indicate that the majority of permanent workers in 2014 were stayers (68.48%), meaning they had maintained permanent worker status since 2007. Meanwhile, the percentage of workers who experienced a transition from contract workers to permanent workers was 31.52%.

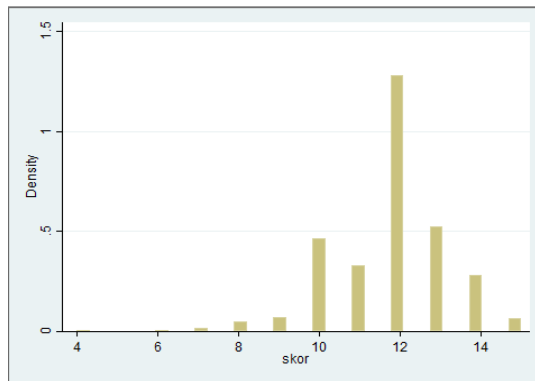
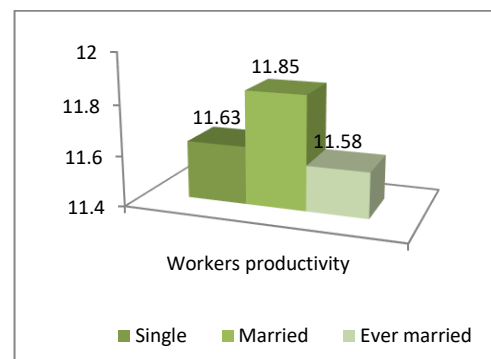


Figure 3. Employee Productivity Score in 2014
Source: Research finding.

his study assessed worker productivity scores using a self-report instrument comprising three items from the PSN (Personality) section. Labor productivity is an essential factor in determining a nation's competitiveness in the global environment. Descriptive analysis reveals that the mean productivity score for workers aged 22 to 64 in IFLS 5 was 11.83 (on a scale of 3 to 15). This average score can be contextualized against Indonesia's global competitiveness ranking. According to The Global Competitiveness Report 2017–2018, Indonesia ranked 36th out of 137 countries (Schwab, 2018). Despite this relatively positive standing and improvement, Indonesia's ranking still remains below several ASEAN neighbors, including Singapore, Malaysia, and Thailand.



(a)



(b)

Figure 4. (a) Average Productivity Score by Gender, (b) Average Score of Worker Productivity by Marital Status

Source: Research finding.

As mentioned above, several other variables are related to worker productivity, such as gender, marital status, length of schooling, health condition, level of job stress, job satisfaction, wages/salaries, and business sector as a proxy for the work environment. The results of the descriptive analysis show that the average productivity score of male workers is 0.10 points higher than that of female workers. However, a married worker has an average productivity score of 0.22 points higher than that of a single worker.

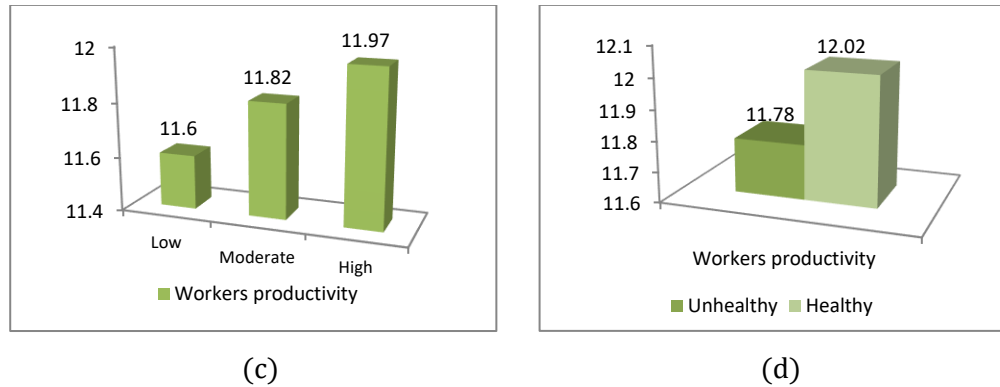


Figure 5. (c) Average Productivity Score by Education Level, (d) Average Score of Worker Productivity according to Health Condition

Source: Research finding.

Education is a form of investment in improving the quality of human resources whose benefits can be felt in the future (Psacharopoulos and Patrinos, 2018). Analysis of worker productivity by education level reveals that workers with secondary education (junior high and high school) have an average productivity score 0.22 points higher than workers with lower education. Meanwhile, workers with higher education (university) had the highest average productivity score, at 11.97 points, compared to those with lower or secondary education. This finding aligns with human capital theory, which posits that formal education enhances income and productivity by imparting knowledge, skills, and problem-solving abilities (Becker, 1994).

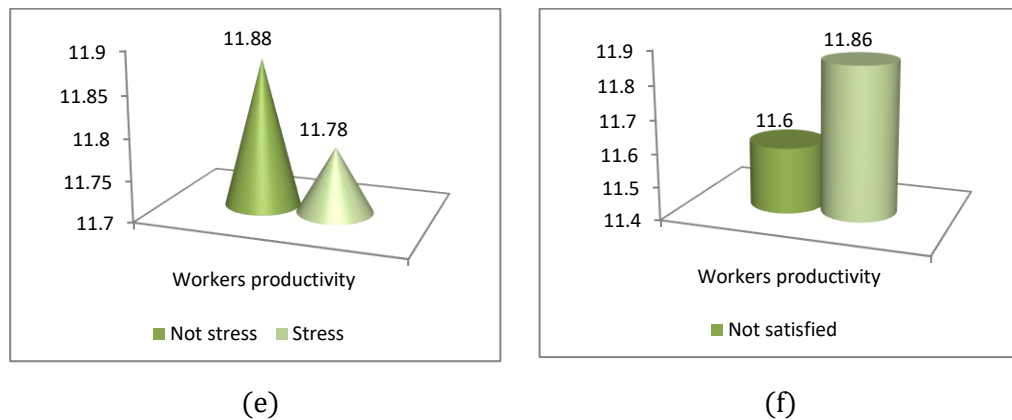


Figure 6. (e) Average Productivity Score according to Stress at Work, (f) Average score of Worker Productivity according to Job Satisfaction

Source: Research finding.

A worker's health condition is directly related to their physical ability to perform work. At the individual level, health directly influences output by enhancing physical energy and mental well-being (Tompa, 2002). The analysis shows that healthy workers have an average productivity score 0.24 points higher than unhealthy workers, indicating that health problems can hinder work productivity.

Stressors and multiple demands at work can affect both physical and mental health, which in turn impacts worker productivity. The average productivity score of workers who report that their jobs do not cause stress is 0.10 points higher than that of workers who report job-related stress. Work-related stress can prevent workers from performing at their best, resulting in suboptimal productivity. Physical and mental health disorders due to stress can increase worker absenteeism due to illness, ultimately reducing productivity (Tompa, 2002).

Job satisfaction is an individual factor that can enhance work engagement and effectiveness (Hairo and Martono, 2019). Each worker's level of job satisfaction is influenced by their personal values and how these align with their work environment. A satisfied worker tends to develop a stronger bond with the organization, leading to greater integrity, commitment, and higher morale (Shaju and Subhashini, 2017). Analysis of productivity scores by job satisfaction level shows that satisfied workers have an average score 0.26 points higher than dissatisfied workers. The average productivity score of workers who are satisfied with their work is 11.86 points, while the average productivity score of those who are dissatisfied is 11.60 points.

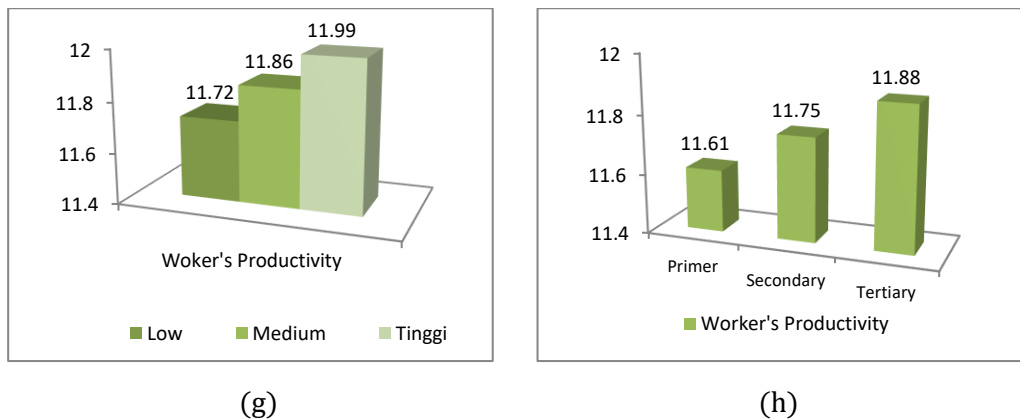


Figure 7. (g) Average Productivity Score according to Salary Classification, (h) Average Productivity Score according to Business Sector

Source: Research finding.

Wages and salaries are a key factor in enhancing worker productivity. Higher wages can attract and retain high-quality workers (Borjas, 2016). Analysis of productivity scores by salary classification reveals a positive relationship: higher salary categories are associated with higher average productivity scores. Workers in the high salary classification have an average productivity score 0.13 points higher than those in the middle classification. Similarly, workers in the medium salary classification have an average productivity score 0.14 points higher than those in the low classification.

Across business sectors, workers in the tertiary sector (services) have an average productivity score 0.13 points higher than workers in the secondary sector (manufacturing). Likewise, the average productivity score of workers in the secondary business sector is 0.14 points higher than that of the primary business sector workers.

Inferential Analysis

The inferential analysis will use the z-score of worker productivity as the dependent variable. The main independent variable (employee status transition) along with control variables will be used to examine their relationship with worker productivity in 2014. Tobit regression is employed because the dependent variable (the z-score of worker productivity) is continuous but censored or limited in range (Amemiya, 1985). The raw productivity scores range from 3 to 15, as explained in the methodology. After standardization, the z-scores range from -4.484598 to 2.142153.

Three Tobit regression models are estimated. The first model examines the relationship between the primary independent variable(s) and worker productivity. The second model adds individual characteristics to assess their relationship with worker productivity. The final model includes all independent variables, including job characteristics, to examine their relationships with worker productivity.

Table 2. Regression Results of Transitional Tobit Employee Status and Control Variables on Worker Productivity

Independent Variables		Model 1	SE	Model 2	SE	Model 3	SE
(1)		(2)	(3)	(4)	(5)	(6)	(7)
Primary Independent Variable							
Worker Status Transition	<i>Stayer</i>	<i>Base</i>					
	<i>Mover</i>	-0.076**	0.034	-0.075**	0.034	-0.063*	0.034
Control Independent Variable							
Gender	Female	<i>Base</i>					
	Male			0.064*	0.034	0.065*	0.035
Marital Status	Single	<i>Base</i>					
	Married			0.105*	0.059	0.093	0.059
	Ever Married			-0.001	0.112	-0.020	0.112
Health Condition	Not Healthy	<i>Base</i>					
	Healthy			0.143***	0.040	0.130***	0.040
Education Period				0.020***	0.004	0.016***	0.004
Job Stress Level	No Stress	<i>Base</i>					
	Stress					-0.101***	0.033
Work Satisfaction	Not Satisfied	<i>Base</i>					
	Satisfied					0.111**	0.048
Wages/Salaries						0.039*	0.020
Business Sector	Primary	<i>Base</i>					
	Secondary					0.075	0.064
	Tertiary					0.112*	0.062

Source: Research finding.

The transition from contractual to permanent employment status has a negative and significant association with worker productivity in 2014 across all three models, albeit at varying significance levels. Adding other variables to the model weakens the relationship between worker status transition and productivity. This suggests that worker productivity is influenced by factors beyond employment status transitions. In Model 3, workers who transitioned employment status (movers) have a productivity z-score 0.063 points lower than those who remained in their original status (stayers). These results align with the descriptive analysis, which showed that workers undergoing employment status transition had lower average productivity scores than non-transitioning workers. The other

control variables significantly influencing worker productivity are gender, education period, job stress level, health status, work satisfaction, wages/salaries, and business sector.

Gender shows a positive and significant association with worker productivity in 2014. Regression results in Models 2 and 3 consistently show that male workers have higher productivity z-scores than female workers. In Model 3, male workers have a productivity z-score 0.065 points higher than female workers (Table 3, column 6). This aligns with the descriptive finding that male workers' average productivity score was 0.10 points higher.

Marital status was categorized as single, married, and ever-married. Marital status can affect worker productivity through psychological well-being and domestic responsibilities (Oselumese et al., 2016). Tobit regression results in Model 2 show that married workers have a positive and significant association with productivity. Married workers have a productivity z-score 0.105 points higher than single workers. However, Models 2 and 3 consistently show that ever-married workers are associated with lower productivity z-scores, though this relationship is not statistically significant. This is reflected in the negative coefficient for the ever-married category.

Consistent with human capital theory, which views educational expenditure as an investment in future productivity (Becker, 1994), our results show that educational attainment, measured in years of formal schooling, has a positive and significant association with worker productivity. Each additional year of education increases the worker productivity z-score by 0.016 points (Table 2, column 6). Regression results in Models 2 and 3 consistently show that workers with higher education have higher productivity scores than those with lower education (Table 3, columns 4 and 6). Years of schooling significantly affect worker productivity at the 1% level in both models. Inferential analysis regarding education confirms the descriptive analysis results: workers with higher education have higher average productivity scores than those with secondary or lower education.

Consistent with expectations, health status significantly affects work capacity. This study categorized respondents' health conditions as unhealthy or healthy. Regression results in Models 2 and 3 consistently show significant results at the 1% level: workers in healthier conditions have higher productivity scores than unhealthy workers (Table 3, columns 4 and 6). In Model 3, healthy workers have a productivity z-score 0.130 points higher than unhealthy workers. This aligns with the study's hypothesis that healthy workers are more productive. The

inferential analysis results are consistent with the descriptive analysis: workers in healthier conditions have higher productivity scores.

Work-related stress, measured by whether the job creates pressure, shows a significant negative association with productivity. Stressful conditions can lead to emotional exhaustion, impairing work performance. The analysis shows a significant negative effect of job-induced stress on productivity, as indicated by the negative coefficient of the stress variable. Jobs that cause stress can decrease the worker productivity z-score by 0.101 points compared to jobs that do not cause stress. These results follow the descriptive analysis: jobs with high stress levels reduce worker productivity scores by 0.10 points compared to stress-free jobs.

Discussion

The results of the inferential analysis show that the transition from contract workers to permanent workers was significantly associated with lower worker productivity in 2014. This aligns with several previous research findings (Bradley et al., 2014; Engellandt and Riphahn, 2005; García Mainar et al., 2018). An increase in job protection, marked by a change in worker status from contract to permanent, reduced worker effort and ultimately decreased employee performance (Engellandt and Riphahn, 2005). Similarly, Bradley (2014) found that increased legal protection following a transition from contract to permanent status significantly increased absenteeism and reduced work effort. Similar findings were reported by García Mainar et al. (2018) in Spain, where transitioning from contract to permanent status increased the probability of absenteeism by approximately 5.3%. This is because contract workers fear dismissal without notice if they underperform or are absent. In another study, Ongera (2023) found a positive and significant relationship between contract employment status and productivity. According to Ongera (2023), many contract workers accept such positions in hopes of eventually securing permanent roles. As such, they view contract work as a stepping stone to being promoted to permanent employment in the long term.

Alternatively, Zijl (2006) suggests that contract workers may exhibit lower productivity due to psychological contract issues. A lack of satisfaction and motivation at work leads to low productivity among contract workers. Contract workers generally receive lower wages and less job security than permanent workers, leading to perceptions of inequity. Feeling treated differently, contract workers may be less motivated to exert their best effort. These factors lower the productivity of contract workers compared to permanent workers.

Another factor that influences worker productivity is the gender of the

worker. Male workers have significantly higher work productivity than female workers. Given the persistence of patriarchal norms in Indonesia, men are typically viewed as primary breadwinners, with fathers bearing crucial responsibility for household financial needs (Becker, 1993). Becker further argued that women's traditional primary role involved childcare and household management. When women enter the labor market, they assume a dual role, balancing domestic responsibilities with work demands. Thus, women's productivity in the labor market is lower than men's. Furthermore, stereotypical gender traits are often cited: men are stereotypically viewed as hardworking, intelligent, ambitious, aggressive, and independent, whereas women are stereotypically associated with gentleness, friendliness, and attractiveness (Hoffman, 1977).

In several previous studies, the effect of marital status on worker productivity remains inconclusive. In this study, ever-married workers' productivity scores were lower than never-married workers', though the relationship was insignificant. Oselumese et al. (2016) found that divorced teachers tend to perform poorly due to solo childcare responsibilities. Conversely, another study found that unmarried workers have higher work productivity because they can work without the obligation to care for the household (Padmanabhan and Magesh, 2016). Mehay and Bowman (2005) found differences in the effect of marital status on productivity between male and female workers. Married male workers tend to perform better and have greater promotion prospects. In contrast, married female workers tend to have lower work productivity. Additionally, working men tend to experience less depression than working women (Anggana et al., 2022). When job characteristics are added in Model 2, marital status shows no significant effect on productivity.

Education is a signal for measuring a worker's productivity (Borjas, 2016). Companies generally use the educational level of a prospective employee as a screening tool in recruiting workers. Workers with higher education are typically more productive because education enhances skills, thereby boosting productivity (Susanto and Udjiyanto, 2019). Moreover, higher-educated workers adapt more readily to new technologies (Arshad and Malik, 2015). Thus, someone with higher education will be more productive at work.

Health is an essential factor in achieving optimal work productivity. In this study, health status consistently affected productivity in both Models 2 and 3. Healthier workers had higher productivity because they were more energetic and resilient in facing work challenges (Bloom and Canning, 2000). A macroeconomic study in Malaysia found that worker health positively affects productivity. Worker health is as crucial as education in significantly boosting labor productivity

(Arshad and Malik, 2015).

Workplace stress can arise from various pressures or demands imposed on workers. The analysis found that stress in the work environment has a negative and significant association with worker productivity. These findings support previous research by Ahmed and Ramzan (2013), which shows that workplace stress can reduce workers' motivation to perform optimally. Stress reflects mental and emotional exhaustion, reducing work enthusiasm (Donald et al., 2005). Thus, the productivity of workers who experience stress tends to be lower than workers who do not experience stress.

Furthermore, based on inferential analysis, work satisfaction positively affects worker productivity. Satisfied workers will have strong emotional ties and commitment to the organization, leading to higher work morale (Shaju and Subhashini, 2017). In the end, high morale will make a worker more productive, such as carrying out work in a timely, effective, and efficient manner. Being accepted by colleagues, affirmed, and cooperating are important feelings for work satisfaction. On the contrary, support from coworkers and managers might reduce stress and increase job fulfillment (Aydın Küçük, 2022).

The inferential analysis found that wages are positively and significantly associated with worker productivity. Akter and Husain (2016) found that financial compensation strongly and positively affected worker productivity. Likewise, the research conducted by Idrees et al. (2015) showed that compensation in the form of wages/salaries positively and significantly affects worker productivity. However, Hameed et al. (2014) found different results, namely that compensation in wages/salaries had no significant effect on worker productivity.

The workplace environment has an extensive role for workers. The quality of the work environment can affect employees' performance and productivity. Someone who works in uncomfortable conditions tends to have low work performance; for example, workers who face various hazards have health problems that might affect absenteeism (Massoudi and Hamdi, 2017). A conducive workplace, such as a quiet, well-equipped office and employee cooperation, could enhance productivity (Adenekan and Nwoko, 2022). Primary business sectors, such as mining, generally have a severe risk for workers regarding job security. On the other hand, workers in the manufacturing sector typically face noise from machines used in the production process. Thus, their work performance is lower when compared to workers in the tertiary sector (service sector).

Conclusion

The Tobit regression analysis concludes that the transition from contract to permanent status negatively affected worker productivity scores as more variables were added to the model. Regression Models 1, 2, and 3 consistently show that as more variables are added, the relationship between employment status transition and productivity in Indonesia weakens.

Nonetheless, the relationship between employment status transition and productivity weakens with the addition of control variables, namely individual and job characteristics. These include gender, health status, work-related stress levels, job satisfaction, wages/salaries, and business sector. The productivity of male workers is higher than that of female workers. The health condition of a worker also affects their work productivity. Moreover, job satisfaction, wage/salary levels, and the business sector positively and significantly affect worker productivity.

The empirical findings suggest that workers prioritize long-term company sustainability and their own financial security over employment status per se. Thus, even contract workers should earn wages commensurate with living costs.

This study uses the variable score of worker productivity, which is subjective because it comes from the respondents' own assessments (self-report measures). Previous research indicates a tendency for self-overestimation in self-reported productivity measures compared to external assessments.

Limitation

As with any empirical research, this study has certain conceptual and data limitations. Conceptually, additional variables related to both employment status and productivity could have been included as determinants in the research model. However, this research relies on a subjective worker productivity score derived from respondents' self-reports. Previous research reveals a tendency for self-overestimation in self-reported productivity measures compared to external assessments. Another limitation of this research is the incomplete data available from IFLS, so analysis can only be carried out using IFLS 4 and 5. The latest data regarding employment status transitions in Indonesia is available for 2014.

This study suggests that future researchers consider incorporating objective measures alongside self-reports to assess worker productivity. Additionally, a longitudinal analysis tracking productivity changes during the transition from contract to permanent status would be valuable.

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Appendix

Variables Explanation

In IFLS 5, there are several types of books, and the data construction in this study is only sourced from book 3A section TK (Employment), book 3B section PSN (Personality), and book K section AR (List of Household Members). The variable of worker productivity is based on the scoring of three statements from the PSN (Personality) section 3B book.

Table 4. Summary of Operational Definitions of Research Variables

Variable	Symbol	Description	Scale / Categorised	Question Source
(1)	(2)	(3)	(4)	(5)
Dependent Variable				
Worker productivity	<i>prod</i>	z-score work performance	Numeric	Book 3B section PSN statements 2, 9 and 12
Primary Independent Variable				
Worker status transition	<i>statrans</i>	change in employment status from 2007 to 2014	0. <i>Stayer</i> 1. <i>Mover</i>	Book 3A Section TK is derived from detail 23a
Control Independent Variables				
Gender	<i>sex</i>	Gender	0. Female 1. Male	Book K Section AR detail 07
Marital Status	<i>Marital</i>	Respondents Marital Status	0. Single 1. Married 2. Ever married	Book K Section AR details 13
Education Period	<i>education</i>	Number of years respondents entered formal school	Numeric	Book K Section AR details 16 and 17
Health Status	<i>health</i>	general health condition of workers	0. Not healthy 1. Healthy	Book 3B Section KK details kk01
Job Stress Level	<i>stress</i>	the stress level at work	0. Not stress 1. Stress	Book 3A Section TK details 26a12
Work Satisfaction	<i>jobs</i>	work satisfaction	0. Not satisfied 1. Satisfied	Book 3A Section TK details 16c1
Wages/ Salaries	<i>salary</i>	Salary per month	Numeric	Book 3A Section TK details 25a1
Business Sector	<i>sector</i>	A business sector where the respondent works	0. Primary 1. Secondary 2. Tertiary	Book 3A Section TK details 19ab

Source: Research finding.