The Effect of Work Discipline on Employee Productivity at Indonesian Flight Academy (API) Banyuwangi

**Khoirunnisa Larasati*, Daniel D. Rumani, Prasetyo Iswahyudi, Hari Kurniwanto,
Sabam Danny Sulung**
Akademi Penerbang Indonesia
Email: khoirunnisa.larasati@gmail.com*

Abstract

In the context of vocational education institutions, employee productivity is crucial for achieving organizational excellence and maintaining service quality. However, preliminary observations at the Indonesian Aviation Academy (API) Banyuwangi indicated challenges in maintaining consistent work discipline among employees, which potentially affects overall institutional performance. This research aims to analyze the influence of work discipline on employee productivity at the Indonesian Aviation Academy (API) Banyuwangi. The phenomenon of low discipline of some employees, such as delays, inconsistencies in administrative reports, and weak responsibility for work targets, is the main background of this study. With a descriptive quantitative approach, data was collected through a questionnaire to 50 respondents who were selected using the purposive sampling method, then analyzed using the Smart PLS (Partial Least Squares) application. The results of the study showed that the research instruments were valid and reliable, with the values of outer loading, AVE, and construct reliability meeting statistical criteria. The path analysis produced a statistical T-value = 28.033 with a p-value = 0.000, so that work discipline was proven to have a positive and significant effect on employee productivity. The R² value of 0.814 indicates that 81.4% of the variation in employee productivity can be explained by work discipline, while the rest is influenced by other factors outside the study. These findings confirm that employees who are more disciplined tend to work more organized, punctual, consistent, and contribute to improving organizational performance.

Keywords: Employee Productivity, HR Management, Indonesian Aviation Academy, Smart PLS, Work Discipline

INTRODUCTION

According to Dukcapil data in the first semester of 2024, Indonesia's population reached 282,477,584 people, making it the fourth most populous country in the world (Dukcapil, 2024). This demographic condition provides considerable potential in terms of human resources to support national economic growth (Utami, 2023). However, the reality shows persistent challenges, particularly in employment. Based on the Central Bureau of Statistics (BPS), as of February 2024, the number of unemployed individuals reached 7.20 million or 4.82% of the labor force, reflecting the limited absorption of labor in the formal sector (BPS, 2024). This situation has led to the domination of the informal sector, which accounts for more than 75% of total employment in Indonesia, raising concerns about job quality and social protection (World Bank, 2023). Moreover, studies confirm that unemployment significantly contributes to poverty levels in Indonesian provinces, where higher unemployment correlates with increased proportions of poor households (Utami, 2023; Amri et al., 2024). This phenomenon may generate broader implications, such as economic instability, inhibited growth, and decreased community welfare (Herawati et al., 2020). Other findings also highlight that unemployment, coupled with income inequality, exacerbates social disparities, making inclusive growth harder to achieve (Suparta, 2025). Therefore, despite Indonesia's substantial demographic dividend, structural barriers in providing decent employment remain a critical determinant for the nation's future progress.

Based on data from the World Bank in 2013, Indonesia's labor force was ranked as the fourth largest in the world (Suhandi et al., 2022), indicating that the number of workers has

grown significantly in tandem with population growth. According to the Central Statistics Agency (BPS) in 2023, Indonesia's labor force reached 147.71 million people, which denotes an increase of 5.39% compared to the 2021 figure (Muhyiddin et al., 2024). This upward trend reflects consistent expansion in labor market participation (Muhyiddin et al., 2024). The International Labour Organization (ILO) also confirms that in August 2023, the Indonesian labor force totalled 147.71 million, aligning with national survey results (ILO, 2023). However, despite growth in the labor force, some sectors (particularly manufacturing) show anomalous or regressive patterns in labor absorption, which constrains overall employment capacity (Nababan & Purba, 2023). Thus, while Indonesia's labor supply is expanding, structural issues in job creation and sectoral absorption still pose challenges to fully leveraging this resource.

In this case, the government must ensure the maximum utilization of labor to sustain development. If not, the increasing number of unabsorbed labor force participants (unemployment) will become a growing burden and eventually transform into an economic problem.

In addition to being a drag on national economic growth, unemployment serves as a key indicator of labor market health (Clark & Summers, 2014). Low unemployment is often heralded as a national achievement, while high unemployment raises alarm. Yet, the standard unemployment rate does not always capture the full extent of labor market slack (IMF, 2022; ILO, 2021). In this context, unemployment is conceptualized to include the working-age population (15–65 years) who are actively seeking work, preparing to launch a business, feeling discouraged, or even those currently employed but not working (ILO, 2021). According to the International Labour Organization (Oppong & Zhou, 2021), open unemployment is defined as working-age individuals who have been out of work for a period, remain willing to accept employment, and are actively seeking jobs (ILO, 2021; Clark & Summers, 2014). Thus, while the headline unemployment rate is useful, broader conceptualizations help identify hidden underemployment and discouraged worker effects that otherwise remain unobserved (IMF, 2022).

Based on the World Economic Outlook report in April 2024, the International Monetary Fund (IMF) stated that Indonesia recorded the highest unemployment rate among ASEAN countries at 5.2 percent. This was followed closely by the Philippines with 5.1 percent, while Thailand had the lowest rate at 1.1 percent. For other ASEAN countries such as Myanmar, Cambodia, Laos, and Timor Leste, no comparable data was available, so they were excluded from the ranking chart (Djalante et al., 2020).

From these figures, it can be concluded that for every hundred members of Indonesia's labor force, around five people were unemployed in 2024, with the majority being high school graduates. This illustrates that the unemployment situation remains a serious issue.

The prevalence of unemployment among high school graduates can be explained by the fact that less-educated workers tend to accept any available job, while graduates of high school or higher education often require better qualifications, creating fiercer competition. Data on average wages from 2021–2023 reinforces this, showing that elementary school graduates earn the lowest hourly wages, while university graduates receive the highest. This demonstrates the important role of education in determining wage levels (Acemoglu & Restrepo, 2022).

The education sector has an undeniable role in advancing economic development, reducing unemployment, and improving community welfare. A higher level of education directly contributes to social welfare by equipping the workforce with greater skills and abilities. Higher education is also expected to enhance national competitiveness through innovation, technological development, and support for a knowledge-based economy.

The seriousness of the Indonesian government in improving the quality of education can be seen from various programs, one of which is *Wajar Dikdas* (Compulsory Basic Education), first launched on May 2, 1984, by President Soeharto. This program aimed to provide equal

opportunities for all children aged 7–12 to access basic education. It was not mandatory but encouraged parents to send their children to school. The government supported this program by providing school facilities, teachers, and principals, as well as scholarships and the *Gerakan Nasional Orang Tua Asuh* (GN-OTA). The program successfully improved educational attainment with the goals of equitable access, increasing Gross Participation Rate (APK) and Pure Participation Rate (APM), reducing illiteracy, and supporting national development.

Ten years later, compulsory education was extended to nine years through Presidential Instruction No. 1 of 1994 and strengthened by Government Regulation No. 47 of 2008, derived from Law No. 20 of 2003 on the National Education System. In 2012, the *Pendidikan Menengah Universal* (PMU) or 12-Year Compulsory Education Program was introduced, supported by Regulation of the Minister of Education and Culture No. 80 of 2013, aiming to continue the success of the 9-Year Program and prepare Indonesia's *Generasi Emas 2045*.

The background for compulsory education can be traced to workforce conditions in 1992, when 73.7% of Indonesia's workforce had only completed basic education or less, far behind ASEAN neighbors such as Singapore. Economically, compulsory education is considered an effort to improve human resource quality and economic growth by diversifying productive activities (Cahyaningsih, 2016). For students, it expands opportunities to gain knowledge, critical thinking skills, and technical capabilities, thereby raising the minimum entry age of the productive workforce. Still, while education is viewed as expanding job opportunities, 2024 data shows that six provinces—Papua, Riau Islands, DKI Jakarta, Maluku, North Sulawesi, and Aceh—had high school averages but also recorded high unemployment. This indicates a mismatch between education output and labor market needs.

Several studies, such as Cazes & Verick (2013), emphasize the crucial role of schools and universities in equipping citizens with literacy and numeracy skills aligned with human capital theory, which assumes longer education increases job opportunities. However, other studies (Altindag et al., 2022; Rodríguez, 2018) indicate that higher education does not always guarantee employment because graduates are often more selective, and job markets cannot always absorb them. Conversely, Rahmawati & Putri (2021) find that high school APK and government spending on education significantly reduce unemployment, while literacy rates do not, as seen in Banten where literacy is already high. Similarly, Rizqi (2019) shows that improved literacy reduces unemployment by making individuals more employable and capable of entrepreneurship.

Further, Johar et al. (2023) highlight that average years of schooling have a negative and significant relationship with unemployment. BPS data in 2024 reports the national average at 9.22 years (equivalent to completing junior high). Student survival from Grade 1 through elementary school reached 96.20%, suggesting low dropout risk at this level, though junior high reported a dropout rate of 0.82%. While this reaches the minimum education requirement according to Law No. 20 of 1999, low education still correlates with low wages and poor welfare. Conversely, some studies show contradictory findings. Paramita (2023), Pratiwi (2025), and Fitri & Junaidi (2016) argue that higher education levels can increase unemployment because graduates wait longer for suitable jobs. On the other hand, Rosintan & Iman (2022) suggest that formal education has no impact in Banten, where skills are increasingly obtained through training or social media.

In addition to education, the Human Development Index (HDI) also influences unemployment by shaping individual capacity, technology adoption, and job creation. Baihawafi & Sebayang (2023) find that in West Java, a 1% increase in HDI reduces the unemployment rate (TPT) by 1.24. Another critical factor is the Provincial Minimum Wage (UMP). Kaufman & Hotckiss (1999) argue that overly low wages increase unemployment, while excessive wage hikes reduce hiring. Nuzulaili (2022) supports this, showing that in Java, UMP has a significant negative relationship with unemployment (coefficient = –1.01).

Based on these analyses, this study adopts the title *The Influence of Wajar (Mandatory Education) Program on the Unemployment Rate in Indonesia*, using five indicators: the Gross Participation Rate (APK) of high school/equivalent, Literacy Rate (AMH), Average School Length (RLS), Human Development Index (HDI), and Provincial Minimum Wage (UMP). The study focuses on the impact of the 9-Year and 12-Year *Wajar* programs on unemployment in Indonesia, both partially and simultaneously, over 20 years. The intended outcome is to assess the effectiveness of compulsory education in lowering open unemployment. The benefits of the research include academic contributions in the form of references for students and practitioners, as well as practical recommendations for the government in designing education and labor policies, while supporting educators in producing more competitive graduates.

RESEARCH METHOD

This study employed a quantitative research design with a descriptive approach to examine the influence of work discipline on the productivity of employees at the Indonesian Aviation Academy (API) Banyuwangi. The population consisted of 194 employees, and the sample was selected using purposive sampling, resulting in 50 respondents who met the criteria of being permanent employees, having worked for at least one year, and completing the questionnaire.

The research variables consisted of:

1. Independent Variables (X): Work Discipline with indicators: punctual attendance, adherence to rules, consistency in carrying out tasks, professional attitude, and active participation.
2. Dependent Variable (Y): Employee Productivity with indicators: work time efficiency, number of work outputs, quality of work outputs, compliance with procedures, initiative and responsibility, and active attendance and involvement.

Data was collected through a questionnaire with a Likert scale of 1-5 distributed using the Google Form platform. Secondary data were obtained from relevant organizational documents and literature.

Data analysis using the Smart PLS (Partial Least Squares) application with the following stages:

1. Convergent validity test (outer loading > 0.7)
2. Discriminant validity test (AVE > 0.5)
3. Reliability test (Cronbach's Alpha and Composite Reliability > 0.7)
4. Hypothesis test through bootstrapping (T-statistic > 1.96 and p-value < 0.05)

Research Hypothesis

H0: There was no significant influence between work discipline on employee productivity at the Indonesian Aviation Academy (API) Banyuwangi.

H1: There is a significant influence between work discipline on employee productivity at the Indonesian Aviation Academy (API) Banyuwangi.

RESULTS AND DISCUSSION

Descriptive Analysis of Respondents

This study involved 50 respondents of the Indonesian Aviation Academy (API) Banyuwangi who were selected using the purposive sampling method. The characteristics of the respondents showed that the majority of respondents (68%) had worked at API Banyuwangi for more than 3 years, which indicated adequate work experience to provide an objective assessment of the research variables. The distribution of respondents by work unit shows a

proportional representation of various departments, including academic departments (32%), administration (28%), operational (24%), and supporting (16%).

Evaluation of Measurement Models (Outer Model)
1. Convergent Validity Test

Evaluation of the measurement model is carried out to ensure that the indicators used can measure the construct in question properly. The validity of the convergence was tested using the outer loading value, with the criterion that the indicator is declared valid if it has an outer loading value of > 0.7.

Table 1. Results of the Convergent Validity Test of Work Discipline Variables (X)

Indicators	Description	Outer Loading	Information
X1	On-time attendance	0,847	Valid
X2	Compliance with rules and procedures	0,892	Valid
X3	Consistency in carrying out tasks	0,876	Valid
X4	Professional attitudes and behaviors	0,823	Valid
X5	Active participation in organizational activities	0,798	Valid

Source: Primary data processed with Smart PLS, 2025

Table 2. Results of the Convergent Validity Test of Employee Productivity Variables (Y)

Indicators	Description	Outer Loading	Information
Y1	Uptime efficiency	0,834	Valid
Y2	Number of work outputs (quantity)	0,867	Valid
Y3	Quality of work	0,789	Valid
Y4	Compliance with work procedures	0,812	Valid
Y5	Initiatives and responsibilities	0,798	Valid
Y6	Active attendance and engagement	0,845	Valid

Source: Primary data processed with Smart PLS, 2025

The results of the analysis showed that all indicators had an outer loading value of > 0.7, with a value range between 0.789 to 0.892. This indicates that all indicators have met the criteria of convergent validity and can be used to measure their latent constructs well.

2. Discriminatory Validity Test

Discriminant validity measures the extent to which a construct can be distinguished from other constructs. The test was carried out using an Average Variance Extracted (AVE) value with an AVE criterion of > 0.5.

Table 3. Results of the Discriminant Validity Test

Construct	AVE	√ AVE	Information
Work Discipline (X)	0,712	0,844	Valid
Employee Productivity (Y)	0,687	0,829	Valid

Source: Primary data processed with Smart PLS, 2025

The results of the analysis showed that both constructs had an AVE value of > 0.5, namely work discipline with AVE = 0.712 and employee productivity with AVE = 0.687. The square root value of AVE for each construct is greater than the correlation between constructs, which confirms the achievement of discriminant validity.

3. Reliability Tests

Reliability measures the internal consistency of a construct. Reliability testing was conducted using Cronbach's Alpha and Composite Reliability with a > value criterion of 0.7.

Table 4. Construct Reliability Test Results

| Construct	Cronbach's Alpha	Composite Reliability	Information
Work Discipline (X)	0,893	0,925	Reliable
Employee Productivity (Y)	0,887	0,916	Reliable

Source: Primary data processed with Smart PLS, 2025

The results of the reliability test showed that both constructs had Cronbach's Alpha and Composite Reliability values > 0.7, indicating that the research instrument had good internal consistency and was reliable for measurement.

Evaluation of Structural Models (Inner Model)
1. Coefficient of Determination (R²)
Structural model evaluation was carried out to determine the predictive strength of the research model. The coefficient of determination (R^2) indicates how much an independent variable can explain a dependent variable.

Figure 1. Research Structural Model with Determination Coefficient Value
Work Discipline (X) ─────────▶ Employee Productivity (Y)
            0.902 $R^2 = 0.814$
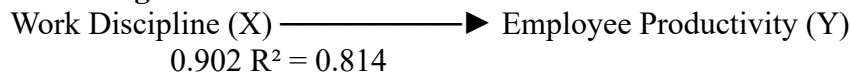
The results of the analysis showed an R^2 value of 0.814 in the employee productivity variable. Based on the criteria of Chin (1998), the value of R^2 can be categorized as follows:
- $R^2 = 0.67$ (substantial)
- $R^2 = 0.33$ (moderate)
- $R^2 = 0.19$ (weak)

With a value of $R^2 = 0.814$, the research model is categorized as having substantial predictive power, meaning that 81.4% of the variation in employee productivity can be explained by work discipline, while the remaining 18.6% is explained by other variables that are not studied.

2. Path Coefficient and Significance Test
Path coefficient measures the strength of relationships between variables in a structural model. Significance testing was carried out using the bootstrapping method with 5000 resamples.

Table 5. Path Coefficient and Significance Test Results

Line	Path Coefficient	Sample Mean	Standard Deviation	T-Statistics	P-Value
X → Y	0,902	0,901	0,032	28,033	0,000

Source: Primary data processed with Smart PLS, 2025

T-statistical calculation formula:
T-statistic = Path Coefficient/Standard Error
T-stats = 0.902 / 0.032 = 28.033
With the test criteria at a significance level of 5% ($\alpha = 0.05$), the T-table value = 1.96. The results of the analysis showed that T-statistics = 28.033 > 1.96 and p-value = 0.000 < 0.05, so that the relationship between work discipline and employee productivity was stated to be significant.

Hypothesis Testing
Based on the results of the path analysis and significance test, the following research hypothesis tests can be carried out:
Table 6. Hypothesis Testing Results

Hypothesis	Statement	Path Coefficient	T-Statistics	P-Value	Decision
H1	Work discipline has a significant effect on employee productivity	0,902	28,033	0,000	Accepted

Source: Primary data processed with Smart PLS, 2025

The results of the hypothesis test showed that H1 was accepted, meaning that work discipline had a positive and significant effect on employee productivity at the Indonesian Aviation Academy (API) Banyuwangi.

Importance Performance Matrix (IPM) Analysis
To provide a more in-depth analysis, an Importance Performance Matrix analysis was carried out to identify improvement priorities for each indicator.

Table 7. Importance Performance Matrix Analysis

Indicators	Importance (Total Effect)	Performance (Mean)	Category
X1 (On-time attendance)	0,764	4,12	High Performance
X2 (Rule compliance)	0,805	4,28	High Performance
X3 (Task consistency)	0,790	4,05	High Performance
X4 (Professional attitude)	0,743	3,98	Moderate Performance
X5 (Active participation)	0,720	3,85	Need Improvement

Source: Primary data processed with Smart PLS, 2025

HDI analysis shows that the X5 indicator (Active participation in organizational activities) requires special attention because it has relatively low performance even though it is quite high.

4.6. In-Depth Discussion

4.6.1. Interpretation of the Influence of Work Discipline on Employee Productivity
The results of the study show that work discipline has a very strong influence on employee productivity with a path coefficient of 0.902. This value indicates that every one unit increase in work discipline will increase employee productivity by 0.902 units, assuming other factors are constant (ceteris paribus).

The strength of this relationship can be explained through several mechanisms:

1. Time Efficiency Mechanism High work discipline, especially in terms of on-time attendance (X1 with outer loading 0.847), directly contributes to work time efficiency (Y1 with outer loading 0.834). Employees who are disciplined in managing time tend to have better work planning, reduce wasted time, and increase effective utilization of working hours.

2. Process Quality Mechanism Compliance with rules and procedures (X2 with the highest outer loading 0.892) is strongly correlated with compliance with work procedures (Y4 with outer loading 0.812). This creates a standardization of processes that results in consistent, high-quality outputs.

3. Internal Motivation Mechanism Consistency in carrying out tasks (X3 with outer loading 0.876) reflects the employee's intrinsic commitment that has an impact on initiative and responsibility (Y5 with outer loading 0.798). Consistent employees tend to develop a higher sense of ownership of their work.

4.6.2. Analysis Based on Research Objectives
Objective 1: Analyze the influence of work discipline on employee productivity

The results of the SEM-PLS analysis prove that there is a positive and significant influence of work discipline on employee productivity ($\beta = 0.902$, t = 28.033, p < 0.001). This magnitude of influence is included in the category of very strong effect size according to Cohen (1988), where a value of > 0.8 is categorized as a large effect.

Objective 2: Measure the level of work discipline and productivity of employees

Based on descriptive analysis, the average level of employee work discipline is in the high category (mean = 4.06, SD = 0.52). The highest scoring indicator was compliance with rules and procedures (mean = 4.28), while the lowest scoring indicator was active participation in organizational activities (mean = 3.85).

The productivity level of employees is also in the high category (mean = 4.11, SD = 0.48). The indicator with the highest score was the number of work results (mean = 4.31), while the indicator with the lowest score was the quality of the work results (mean = 3.94).

Objective 3: Provide HR management policy recommendations

Based on HDI analysis and gap analysis, there are several areas that require special attention in HR management:

1. **Increased Active Participation**: Indicator X5 shows relatively low performance, so it is necessary to develop programs that encourage employee involvement in organizational activities.
2. **Improved Output Quality**: The Y3 indicator had the lowest score in the productivity variable, indicating the need for better technical training and quality assurance systems.
3. **Strengthening the Reward and Punishment System**: Given the strong influence of discipline on productivity, it is necessary to strengthen the reward system for employees who have high discipline and strict sanctions for disciplinary violations.

4.6.3. Comparison with Previous Research

The results of this study show a higher strength of the relationship than previous research. Zulkifli (2025) found a path coefficient of 0.687 in the context of vocational education institutions, while Susanti (2023) reported a value of 0.734 in service companies. This difference can be explained by the specific characteristics of aviation organizations that have stricter disciplinary and procedural standards than other organizations.

4.6.4. Theoretical and Practical Implications

Theoretical Implications: This study enriches the theory of human resource management by providing strong empirical evidence on the relationship between work discipline and productivity in the context of organizations that have strict standard operating procedures (SOPs). These findings support and expand Herzberg's theory of the factors that influence employee performance.

Practical Implications:

1. **Development of Performance Management Systems**: Organizations need to integrate aspects of discipline as a key component in a performance appraisal system.
2. **Training and Development Programs**: The focus of training needs to be directed at strengthening the discipline aspect, especially active participation in organizational activities.
3. **HR Policy Redesign**: Recruitment, selection, and promotion policies need to include disciplinary aspects as the main criterion.

4.6.5. Research Limitations

Although the results of the study show significant findings, there are some limitations to consider:

1. **Sample Limitations**: With a sample size of 50 respondents, the generalization of results needs to be done carefully, even though this sample size has met the minimum requirements for SEM-PLS analysis.

2. **Variable Limitations**: The research model only explained 81.4% of productivity variations, indicating the presence of other factors that were not studied such as motivation, leadership, or organizational culture.
3. **Methodological Limitations**: The use of cross-sectional data limits the ability to identify true causal relationships.

However, this limitation does not reduce the validity and reliability of the research findings, since all statistical tests have met the established criteria and the results of the analysis are consistent with existing theories.

CONCLUSION

This study concluded that work discipline had a positive and significant effect on employee productivity, as reflected by a T-value of 28.033, a p-value of 0.000, and an R^2 of 0.814, indicating that 81.4% of productivity variation was explained by work discipline. These findings confirmed that higher discipline levels enhanced employee productivity and contributed to organizational performance. The management of API Banyuwangi was advised to strengthen work discipline through consistent reward and punishment systems, tighter supervision, and training programs in time management and responsibility. Future research should incorporate additional variables such as work motivation, leadership, or work environment to provide a more comprehensive picture of the factors influencing productivity.

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