


The Effect of Information Technology Mastery and Work Discipline on Employee Performance Through Work Productivity as an Intervening Variable at PT. Incasi Raya

Lorenz Kintana Luwiensky¹, John Veri²

^{1,2}Putra Indonesia University "YPTK" Padang

Article Info	ABSTRACT
Keywords: Information Technology Mastery, Work Discipline, Work Productivity and Employee Performance	This study aims to examine the influence of information technology mastery and work discipline on employee performance through work productivity as an intervening variable at PT. Incasi Raya. Data collection methods were conducted through surveys and questionnaires, with a sample of 67 respondents. The analysis method used was structural equation modeling using SmartPLS. The results of the study showed a significant influence mastery of information technology to work productivity. There is a significant influence work discipline to work productivity. There is a significant influence mastery of information technology to employee performance. There is a significant influence work discipline to employee performance. There is a significant influence work productivity to employee performance. Work productivity mediates the influence of mastery of information technology to employee performance. Work productivity mediates the influence of work discipline to employee performance
This is an open access article under the CC BY-NC license 	Corresponding Author: Lorenz Kintana Luwiensky Putra Indonesia University "YPTK" Padang Loren.oxygen@gmail.com

INTRODUCTION

In today's digital era, technological developments are increasingly advanced from time to time, making competition in the world of work increasingly intense. Technological advancements and the current global world have triggered major changes in various sectors, including work systems in organizations, both business and non-business organizations. It can be seen that business competitors are increasing in number, which means business competition is increasingly broad and tight. This can be seen from the number of existing competitors with similar types of businesses, which means competition is increasing. Supported by today's increasingly sophisticated technological advances, this creates business opportunities that are also increasingly open. To be able to compete in this increasingly tight business world, companies must have products or services that are superior to those of competitors. This can be realized if the company's human resources are qualified.

According to (Imbron, 2021) Human Resource Management is one of the efforts undertaken by a company to manage its human resources. These resources are directed towards achieving predetermined company goals. Human Resource Management in a

company focuses on human resource recruitment, management, and direction activities to achieve company goals. The success of human resource management in carrying out organizational functions is measured by the performance of the managed human resources.

For companies, performance assessments are crucial. These assessments can be used to measure the company's success over a specific period of time. To enhance this success, companies need to make efforts to improve performance, one way of which is by involving more and more human resources in company activities.

Employees are a crucial resource within a company and are often referred to as the spearhead for achieving company goals. Therefore, companies require high-performing human resources, or employees, to achieve their stated goals. As human resources, employees are the most important asset compared to other production factors, serving as the primary driving force behind a company's operations. To be competitive, organizations/companies must have robust human resources.

The performance of a company's human resources is a valuable asset for achieving its goals. Every company hopes to improve its performance with high-quality, high-performing human resources. High human resource performance can benefit the company by generating significant profits. Employee performance is often defined as task accomplishment, where employees must work in accordance with the company's work program to demonstrate the company's level of performance in achieving its vision, mission, and goals. According to (Mahardhika & Werdiningsih, 2021) Performance is the work results achieved by a person or group of people in an organization in accordance with their respective authorities and responsibilities in order to achieve the organization's goals legally, without violating the law and in accordance with moral ethics. Meanwhile, according to MS Hasibuan, in (Hendra, 2020) revealed that "Performance is a combination of three important factors, namely the ability and interest of a worker, the ability and acceptance of explanations of task delegation and roles, and the level of worker motivation. And according to (Anggraini, 2022) Several factors that influence employee performance are education, skills, discipline, attitude, work ethic, motivation, work environment and climate, industrial relations, and mastery of technology.

The increasingly advanced development of technology has increased competition in the world of work. The computerized system currently applied to all activities has resulted in a shift in human resource management systems that are more influenced by information technology. Mastery of information technology is also a factor that can influence employee performance. According to (Andriana et al., 2020) states that computer-based information technology is one of the information technologies that has a great influence on organizational information systems because with computer-based information systems, it can be presented in a timely and accurate manner. Meanwhile, according to (Ilham Habibi et al., 2020) Information Technology is a technology used to process data, including processing, obtaining, compiling, storing, and manipulating data in various ways to produce quality information, namely information that is relevant, accurate, and timely. (Handayani et al., 2018) A company's mastery of information technology is determined by many factors, one of

which is the characteristics of its users. Differences in user characteristics are also influenced by behavioral aspects. And according to (Jusriadi & Muchran, 2023) states that mastery of information technology is a technology used to process data, including processing, obtaining, compiling, storing, manipulating data in various ways to produce quality information, namely information that is relevant, accurate and timely, which is used for personal, business and government purposes.

In addition to mastery of information technology, work discipline is also a factor that can influence improved performance. According to (Saputro & Verawati, 2022) Work discipline is a person's ability to carry out their work duties and obligations in a timely, consistent, and effective manner. Meanwhile, according to (Yulianie, 2019) Work discipline is a certain condition in which people who are members of an organization submit to existing regulations with a happy heart. According to (Shofwani & Hariyadi, 2019) Work discipline is an attitude of obedience and loyalty of a person/group of people to written/unwritten rules that are reflected in the form of behavior and actions in an organization to achieve a certain goal. So employees who have good work discipline tend to be more organized, effective, and efficient in completing their tasks, and this in turn can have a positive impact on the performance of the company or organization where they work. Therefore, work discipline is one of the key factors that can influence the success and performance of a company or organization.

Another factor that can influence employee performance is work productivity. (Ariani et al., 2020) According to Agustin, work productivity is the ability to produce goods and services from various human resources. Broadly speaking, work productivity is the ability to improve employee skills and work outcomes, as seen from the perspective of human resources themselves. Meanwhile, according to (Safitri & Gilang, 2020) Productivity is generally defined as the ratio of the results achieved to the total power or production factors used. It can also be defined as the quantity of goods or services produced by an individual, group, or employee within a given time period. Therefore, work productivity can be concluded as a person's ability to perform work as efficiently as possible within a specified timeframe and to produce quality results.

PT. Incasi Raya located in Kenagarian Sinamar, Asam Jujuhan District, Dharmasraya Regency, West Sumatra Province which is one of the companies of the Incasi Raya Group headquartered in Padang, Jl. Diponegoro No. 7, Postal Code 25117, West Sumatra. PT. Incasi Raya is a company engaged in palm oil plantations and processing. PT. Incasi Raya continues to grow and already has branches in various regions. It is indicated that employee performance at PT. Incasi Raya, Nagari Sinamar, Asam Jujuhan District, Dharmasraya Regency is not optimal, allegedly caused by, Work Discipline and Ability in Mastering Information Technology at PT. Incasi Raya Pangian is still low.

Based on research conducted by (Hilardi et al., 2022) with the title "The Influence of Information Technology Mastery, Motivation, Work Discipline, and Job Satisfaction on the Performance of Staff at the Nabire Persada Health Sciences College" states that the results of the Information Technology Mastery hypothesis test have a significant influence on Employee Performance. In the research conducted by (Yulianie, 2019) The study, entitled "The

Influence of Work Discipline and Work Motivation on Employee Performance at the Metro Selatan District Office, Metro City," states that the results of the hypothesis test show that the work discipline variable has a significant influence on employee performance. This proves that the hypothesis previously considered by researchers is proven and true. Good employee discipline will improve employee performance. The research conducted by (Fajriansyah et al., 2022) with the title "The Influence of Work Environment and Work Productivity on Employee Performance at Daya Regional General Hospital During Covid-19" states that the results of the hypothesis testing of the work environment and work productivity have an influence on employee performance simultaneously.

METHOD

Structural Equation Modeling (SEM) Analysis

This study used the Structural Equation Modeling (SEM) analysis tool using the SmartPLS program. SmartPLS is a component-based approach for testing structural equation models, commonly called SEM. SmartPLS is based on the idea of having two iterative procedures that use least squares estimation for single and multi-component models. By applying these procedures, this algorithm aims to minimize the variance of all dependent variables, therefore the cause and direction between all variables need to be clearly defined. SmartPLS is divided into measurement models and structural models. SmartPLS is a powerful method because it is not based on many assumptions. Data does not have to be multivariate normal distribution (indicators with categorical, ordinal, interval, and ratio scales can be used in the same model). SmartPLS is also more efficient with algorithmic calculations that are capable of estimating larger and more complex models with hundreds of latent variables and thousands of indicators. (Sukmawati, 2023).

Measurement Model Test (Outer Model)

In data analysis techniques using SmartPLS, there are three criteria for assessing the outer model: Convergent Validity, Discriminant Validity, and Composite Reliability. Convergent validity of a measurement model with reflective indicators is assessed based on the correlation between item scores or component scores estimated using SmartPLS software. An indicator is considered to have good reliability if it has a value above 0.7. We can see this figure by referring to the Outer Loading table in SmartPLS. (Darwin, 2021). In this composite reliability test, there are two tables that must be observed: the values contained in the Composite Reliability table and Cronbach's Alpha, which must be greater than 0.7. For the Discriminant Validity test, it can be seen from the cross-loading value. The correlation value of the indicator to its construct must be greater than the correlation value between the indicator and other constructs. There is another way to test Discriminant Validity by comparing the root value of the Average Variance Extracted (AVE) for each construct with the correlation between the construct and other constructs.

1. Measurement Model or Validity

The outer model assessment aims to assess the correlation between item or indicator scores and their construct scores, indicating the level of validity of a statement item. Outer model testing is conducted based on the results of a questionnaire trial conducted for all research variables. There are three criteria in the use of data analysis techniques to assess the outer model: Convergent Validity, Discriminant Validity, and Composite Reliability. In the development stage, a correlation of 0.50 to 0.6 is considered acceptable. In research, the limit for convergent validity is above 0.7.

2. Reliability

Once the data validity level is known, the next step is to determine the level of data reliability or the level of reliability of each construct or variable. This assessment is done by looking at Composite reliability value and Cronbach alpha value. A construct is said to be reliable if it provides a Cronbach alpha value > 0.70.

3. R-square

Next, as explained previously, the inner model assessment will be evaluated through the R-Squared value, to assess the influence of certain exogenous latent constructs on endogenous latent constructs to see whether they have a substantive influence.

Path Coefficient and Hypothesis Testing

Inner model or structural model testing is conducted to examine the relationships between variables, their significance values, and the R-square of the research model. Model assessment using PLS begins by examining the R-square for each dependent latent variable. Changes in the R-square value can be used to assess the substantive influence of a particular independent latent variable on the dependent latent variable.

RESULTS AND DISCUSSION

Research Description

Table 1. Calculation of Questionnaire Distribution Results

No	Questionnaire	Amount	Percentage
.		t	%
1	Distributed questionnaires	67	100
2	Unreturned questionnaires	0	0
	Incorrectly filled out (defective or damaged)		0
3	questionnaire	0	
4	Questionnaires suitable for data processing	67	100

Source: Survey Results, 2025

Research Data Analysis

The data processing technique in this study uses the SEM method based on Partial Least Square (PLS) which requires two stages for the assessment of a research model: the outer model and the inner model. The outer model assessment aims to assess the correlation between item or indicator scores and their construct scores, which indicate the level of validity

of a statement item. Outer model testing is carried out based on the results of questionnaire trials that have been conducted for all research variables. There are three criteria in the use of data analysis techniques to assess the outer model: Convergent Validity, Discriminant Validity, and Composite Reliability. In the development stage, a correlation of 0.50 to 0.6 is considered adequate or acceptable. In research, the limit for convergent validity values is above 0.7.

Outer Model (Structural Model) Testing Before Elimination

Based on the results Testing the outer model using SmartPLS, obtained the correlation values between the statement items of the research variables as follows:

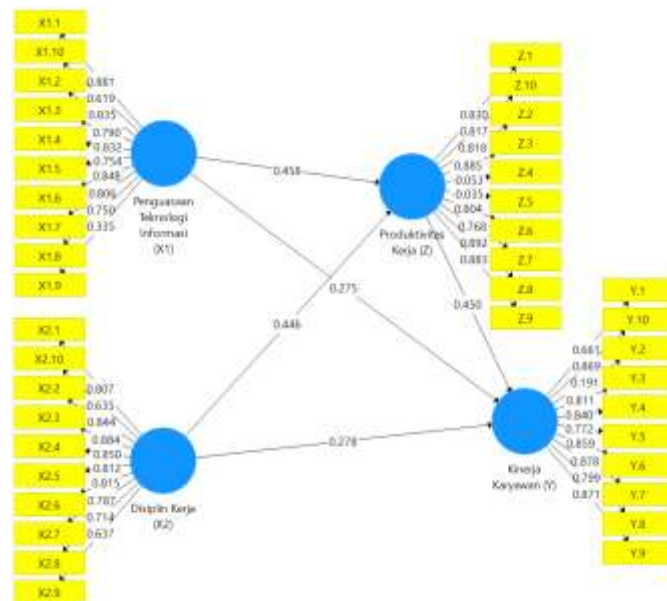


Figure 1. Outer Loadings Before Elimination

In data analysis techniques using SmartPLS, there are three criteria for assessing the outer model: convergent validity, discriminant validity, and composite reliability. Convergent validity of a measurement model with reflective indicators is assessed based on the correlation between item scores or component scores estimated with PLS software. Indicators are considered to have good reliability if they have a value above 0.7. There are three criteria in the use of data analysis techniques to assess the outer model: convergent validity, discriminant validity, and composite reliability. In the development stage, a correlation of 0.50 to 0.6 is considered adequate or acceptable. In research, the limit value of convergent validity is above 0.7.

Outer Model (Structural Model) Testing After Elimination

Based on the results Testing the outer model using SmartPLS, obtained the correlation values between the statement items of the research variables as follows:

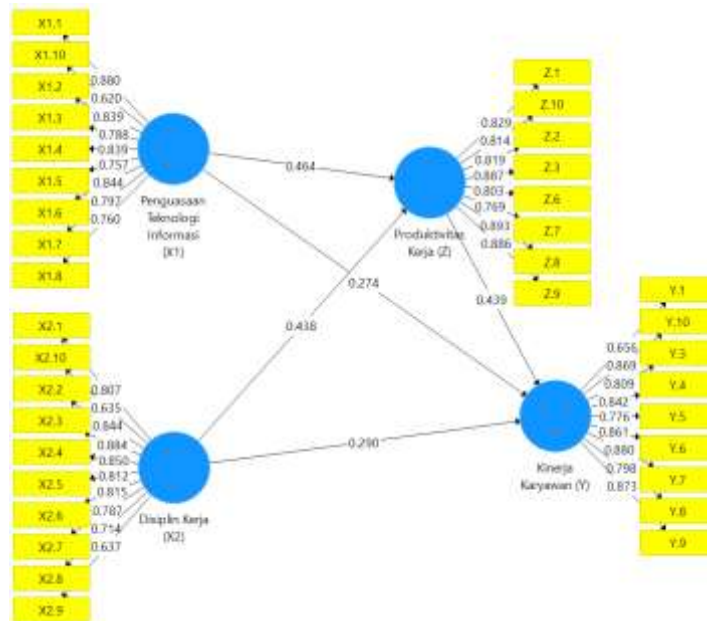


Figure 2. Outer Loadings After Elimination

Average Variance Extracted (AVE) Assessment

The validity criteria for a construct or variable can also be assessed through the Average Variance Extracted (AVE) value for each construct or variable. A construct is considered to have high validity if its value is above 0.50. The AVE values for all variables are presented below.

Table 2. Average Variance Extracted (AVE) Value

	Average Variance Extracted (AVE)
Employee Performance (Y)	0.674
Mastery of Information Technology (X1)	0.632
Work Discipline (X2)	0.613
Work Productivity (Z)	0.703

Based on Table 2, it can be concluded that all constructs or variables above meet good validity criteria. This is indicated by the Average Variance Extracted (AVE) value above the recommended 0.50 criterion.

Outer Model Testing (Structural Model)

The next testing process is testing the inner model, or structural model, which aims to determine the relationships between hypothesized constructs. The structural model is evaluated by observing the R-Square value for the endogenous construct and the influence it receives from the exogenous construct.

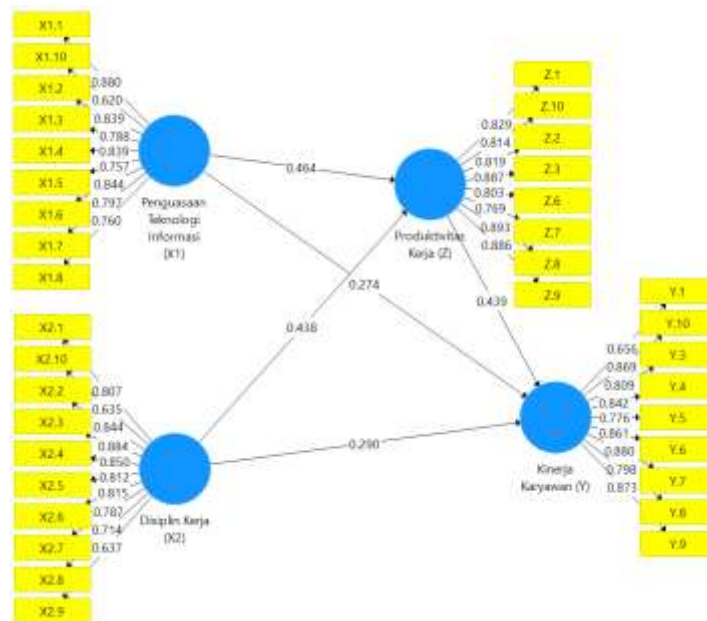


Figure 3. Structural Outer Model

Based on the image above, the structural model above can be formed into the following model equation:

- a. Equation model I, is a description of the magnitude of the influenceconstructmastery of information technologyAndwork disciplinetowork productivitywith the existing coefficients plus the error rate which is an estimation error or which cannot be explained in the research model.

$$Z = 0.464X1 + 0.438X2$$

- b. Equation model II, is a description of the magnitude of the influenceconstructmastery of information technology, work disciplinedanwork productivitytoemployee performance with each coefficient for each construct plus an error which is an estimation error.

$$Y = 0.274X1 + 0.290X2 + 0.439 Z$$

Next, as explained previously, the inner model assessment will be evaluated throughThe R-Square value of the employee performance variable is 0.881 or 88.9%, so the contribution of the variables of information technology mastery, work discipline and work productivity to employee performance is 88.9%, the remaining 11.1% is influenced by other variables outside this study such as communication, work environment and job satisfaction.

The R-Square value of the work productivity variable is 0.732 or 73.2%, so the contribution of the information technology mastery and work discipline variables to work productivity is 73.2%, the remaining 26.8% is influenced by other variables outside this research such as communication, work environment and job satisfaction..

PenHypothesis test

TestingThe hypothesis aims to answer the problems in this study, namely the influence of certain exogenous latent constructs on certain endogenous latent constructs, either directly or indirectly through mediating variables. Hypothesis testing in this study can be assessed

from the magnitude of the t-statistic or t-count compared to the t-table of 1.96 at 5% alpha. If the t-statistic/t-count < t-table 1.96 at 5% alpha, then Ho is rejected and if the t-statistic/t-count > t-table 1.96 at 5% alpha, then Ha is accepted. The following SmartPLS output results illustrate the estimated output for testing the structural model.

Table 4. Results for Inner Weights Direct Affect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Mastery of Information Technology (X1) -> Work Productivity (Z)	0.464	0.447	0.118	3,942	0,000
Work Discipline (X2) -> Work Productivity (Z)	0.438	0.446	0.109	4,011	0,000
Information Technology Mastery (X1) -> Employee Performance (Y)	0.274	0.268	0.104	2,636	0,009
Work Discipline (X2) -> Employee Performance (Y)	0.290	0.291	0.111	2,616	0,009
Work Productivity (Z) -> Employee Performance (Y)	0.439	0.447	0.096	4,583	0,000
Mastery of Information Technology (X1) -> Work Productivity (Z) -> Employee Performance (Y)	0.204	0.202	0.075	2,708	0,007
Work Discipline (X2) -> Work Productivity (Z) -> Employee Performance (Y)	0.192	0.199	0.065	2,963	0,003

CONCLUSION

From the discussion in the previous chapters, several conclusions can be drawn: there is a significant influence of mastery of information technology on work productivity. There is a significant influence of work discipline on work productivity. There is a significant influence of mastery of information technology on employee performance. There is a significant influence of work discipline on employee performance. There is a significant influence of work productivity on employee performance. Work productivity mediates the influence of mastery of information technology on employee performance. Work productivity mediates the influence of work discipline on employee performance.

REFERENCE

- Accounting, J., Use, P., Information, T., Interpersonal, B., Leadership, DANG, Empirical, S., Bank, P., Di, S., Ambon, K., Economics, F., Business, D., Pattimura, U., Use, P., & Information, T. (2020). No Title. 8(2), 117–126.
- Andriana, M., Sumarlin, T., & Panjaitan, R. (2020). The Influence of Information Technology and Tax Information Systems on Financial Managerial Performance. *Jesya (Jurnal*

- Ekonomi & Ekonomi Syariah), 3(1), 74–83.
- Anggraini, N. (2022). The Effect of Information Technology Use and Competence on Employee Performance with Work Motivation as an Intervening Variable (Case Study at the Department of Agriculture and Food, Demak Regency). *Formosa Journal of Applied Sciences*, 1(4), 315–334. <https://doi.org/10.55927/fjas.v1i4.1189>
- Ariani, DR, Ratnasari, SL, & Tanjung, R. (2020). The Effect of Job Rotation, Work Discipline, and Workload on Employee Work Productivity. *Jurnal Dimensi*, 9(3), 480–493. <https://doi.org/10.33373/dms.v9i3.2723>
- Darwin, M. (2021). *Quantitative Approach Research Methods*. Indonesian Science Media and Author.
- Fajriansyah, Muh Imam Taufiq, Halida Sasmita, Aminuddin Hamdat, & A We Tenri Fatimah Singkeruang. (2022). The Influence of Work Environment and Work Productivity on Employee Performance at Daya Regional General Hospital During Covid-19. *Nitro Journal of Management Science*, 1(2), 150–160. <https://doi.org/10.56858/jsmn.v1i2.95>
- Handayani, R., Runtuwene, RF, & Sambul, SAP (2018). Journal of Business Administration Vol. 6 No. 2 Year 2018. *Journal of Business Administration*, 6(2), 34–40.
- Hendra, H. (2020). The Influence of Organizational Culture, Training, and Motivation on Employee Performance at Tjut Nyak Dhien University, Medan. *Maneggio: Scientific Journal of Master of Management*, 3(1), 1–12. <https://doi.org/10.30596/maneggio.v3i1.4813>
- Hilardi, A., Modding, B., & Putra, AHPK (2022). The Influence of Information Technology Mastery, Motivation, Work Discipline, and Job Satisfaction on Staff Performance at the Persada Nabire Health Sciences College. *Journal of Governance (JTK)*, 9(2), 126–140.
- Imbron, IBP (2021). *Human Resource Management*. Widina Bhakti Persada.
- Jusriadi, E., & Muchran, M. (2023). *Humantech Indonesian Multidisciplinary Scientific Journal* The Influence of Self-Efficacy, Mastery of Information Technology on Employee Performance with Job Satisfaction as an Intervening Variable. 2(9), 1987–2000.
- Safitri, AE, & Gilang, A. (2020). The Effect of Job Stress on Employee Work Productivity in. *MEA Scientific Journal (Management, Economics and Accounting)*, 4(1), 216–226.
- Saputro, RC, & Verawati, DM (2022). The Influence of Motivation and Work Discipline on Employee Performance at the Bener Purworejo District Office. *Transekonomika: Accounting, Business and Finance*, 2(5), 523–534. <https://doi.org/10.55047/transekonomika.v2i5.244>
- Shofwani, SA, & Hariyadi, A. (2019). The Influence of Compensation, Motivation, and Work Discipline on Employee Performance at Muria Kudus University. *Jurnal Stie Semarang*, 11(1), 52–65. <https://doi.org/10.33747/stiesmg.v11i1.338>
- Sukmawati, AS (2023). *Quantitative Research Methods*. PT. Sonpedia Publishing Indonesia.
- Yulianie, E. (2019). The Influence of Work Discipline and Work Motivation on Employee Performance at the Metro Selatan District Office, Metro City. *Simplex Journal*, 2(April), 103–111.