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The Effect of Information System of Management ERP and Work Environment to Employee Productivity

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Abstract: This research determines the impact of Enterprise Resource Planning (ERP) management information systems and the work environment on employee productivity. The study employs a causal associative quantitative method, analyzing data from 26 employees at PT. X through saturated sampling. Data analysis involves validity, reliability, and classical assumption tests, followed by multiple linear regression and hypothesis testing via SPSS 20. Results indicate that the ERP management information system partially and significantly influences work productivity with a correlation of 0.814 (perfect correlation). Similarly, the work environment significantly affects productivity with a moderate correlation of 0.547. Simultaneously, both variables contribute 75.5% to employee productivity. This research provides original insights by specifically linking ERP structural components— hardware, software, and databases—directly to vocational productivity metrics. The implications suggest that companies must prioritize ERP system maintenance and environmental ergonomics to optimize human resource output.

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Introduction

The rapid development of technology and the increasing need for information that can support employee productivity, manual methods are sometimes no longer feasible within management. Therefore, designing a system that aims to replace manual systems plays a significant role in increasing employee productivity. Implementing a system within a management environment will assist users in carrying out their activities. A supportive system will indirectly simplify work processes and increase employee productivity. Therefore, most companies implement information technology to support various activities within their organization. An information system is a complex tool that manages the distribution of data. There are various types of information systems, one of which is a management information system. A management information system is a collection of interconnected components. These components are responsible for collecting, obtaining, processing, storing, and distributing data and information. Therefore, information systems play a crucial role in a company's operations.

The work environment can be defined as the place where a person works or can be defined as the place or environment surrounding that person. The work environment is categorized as a social and professional environment where a person interacts with a number of people. According to several researchers, the work environment has a significant impact on employee performance and productivity. Some researchers define the work environment as processes, systems, structures, tools, or conditions in the workplace that have a positive or negative impact on an individual's performance. The work environment encompasses various policies, regulations, culture, resources, work relationships, work location, and internal and external environmental factors, which can influence how employees perform their job functions.

PT. X is currently implementing a work system using an ERP-based management information system. According to HRD PT. X "HRD division easily monitors employee needs and analyzes employee work reports, but there are often obstacles such as access rights, server interruptions, network disruptions and other most frequent obstacles in the form of time differences between countries with some employees who are in overseas". The impact can be detrimental to employees in allocating wages because work hours are not recorded in the system, and hinder the work focus of employees. According to Jogiyanto (2017: 34) the system can be defined as a procedural approach and a component approach. Based on the procedural approach, the system can be a collection of procedures that have a specific purpose, seen from the component approach, the system is a collection of related components, thus forming a unity to achieve a specific purpose. Laudon and Laudon's 2012 book (Taufiq 2018: 8) explains why information systems are so important today and why companies invest so much in them. In the United States, 23 million managers and 113 million workers rely on information systems to achieve strategic business goals in America and other countries. Judging by current technological advances, businesses are investing more in information systems to achieve strategic business goals: operational excellence, new products, services, and business models, customer-supplier relationships, improved decision-making, competitive advantage, and business continuity.

The work environment can significantly impact an employee's ability to complete tasks and targets, thus affecting productivity and employee health and well-being. These factors fall into two categories: those influenced by procedures, protocols, and management requirements, and those arising from the design of the workplace, office, or factory. Management-influenced factors include the development of organizational plans, such as the allocation of responsibilities across all levels of the organization, the definition of job

descriptions, and the level of access to management and administrative support needed to complete tasks; work patterns, shift work, rest periods, absences or leave replacements; and health and safety policies, including the provision of training, the development of safe work practices, and the provision of adequate protective clothing and equipment. In a competitive work environment, management tends to be reluctant to exploit the potential of its workforce. Researchers have assessed key factors within the work environment as significantly influencing employee motivation and performance. The work environment in place impacts employee morale, productivity, and performance—both positively and negatively. Poor conditions can impact employee performance in the form of delays in work completion, frustration, and impacts on personal growth.

This research contributes to the field by evaluating how integrated ERP modules (sales, marketing, and accounting) interact with the physical and social work environment to dictate efficiency in a high-pressure corporate setting. Unlike previous studies that focus solely on system quality, this study integrates internal environmental factors like noise levels and air circulation as critical productivity moderators.

Efforts to increase work productivity are not just a matter of the number of workdays, but also by combating work environment conditions to improve the work performance of employees who are expected to be able to improve work efficiency and effectiveness. PT. X applies routine monitoring in every employee's monthly report by including the idea of the junction idea as a means for employees to submit suggestions about the company's condition.

Table 1.1
Employee junction ideas about the work environment

Idea Junction January	**Idea Junction February**	**Idea Junction March**
Lt1's ceiling is leaking in the rain	*Uprage* RAM	Add PC RAM for ease of work
Installation of front office canopy	Change chairs and shoe racks that have started to break	*Reposition seating according to division*
Lack of knowledge about BIM	Don't use free antivirus because of its limited features	There is no room to rest when overtime
The toilet on floor 2 has started to break down	The rolling door is difficult to open and noisy	Painting the hallway wall

Source: Employee monthly report data (January - March 2025)

There is research from several researchers that aims to examine the causal effect of ERP information systems, specifically in utilizing the variable quality of system and information as the independent variable and the performance of employees as the dependent variable with user satisfaction and system users as the two intervening variables. The results display that the quality of sistems has both direct and indirect influence on the performance of employees. Furthermore, the quality of information has proven to show negligible effect on the performance of employees' variable. The performance of employees' variable indirectly affected by the quality variable of information through the both system users and user satisfaction intervening variables (Jarot S. et al., 2018). Monk and Wagner

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(2013) explained that “ERP software supports the efficient operation of business processes by integrating tasks related to sales, marketing, manufacturing, logistics, accounting, and staffing- through a business”. It is, therefore, argued that ERP implementation has numerous advantages for businesses and organizations.

In the modern industrial era, companies struggle with manual management methods that fail to sustain competitive productivity levels. At PT. X, the primary challenge lies in the inconsistency of employee productivity figures despite the implementation of digital systems. Specifically, technical barriers such as server interruptions and network disruptions in the ERP system directly hinder work focus and wage allocation accuracy. Furthermore, physical workplace issues leaking ceilings and inadequate hardware create a significant gap between technological potential and actual performance.

Based on a comparison of productivity over the past three months, calculated based on total timesheet hours, total attendance hours, and total difference, employee productivity figures do not consistently increase each month. The biggest factors contributing to these productivity issues are the management information system's work system, which can affect the calculation of recorded work hours in the system, and the work environment, which can become an obstacle in carrying out work, thus affecting the completion time recorded in the ERP system.

The influence of management information systems and work environment can be seen from the percentage of work productivity at PT. X with productive provisions above 50% in accordance with the Manpower Act. Based on the functions and advantages of the management information system that facilitates employees in managing and managing each individual work assisted with the ERP management information system, as well as the work environment that has an influence on employee productivity. So as to make researchers interested in conducting research to determine the effect of some of these factors on work productivity, the researchers took the title **"THE EFFECT OF INFORMATION SYSTEMS OF MANAGEMENT ERP AND WORKING ENVIRONMENT OF WORK PRODUCTIVITY ".**

Research Method

This study was conducted to determine the effect of ERP management information systems and the work environment on work productivity. This research is quantitative. This research is classified as causal associative research. Causal associative research is research that seeks causal relationships or influences, namely the relationship or influence of the independent variable (X) on the related variable (Y). Research instruments are about collecting the data needed by researchers. Data are collected through research instruments, by distributing questionnaires directly to respondents to answer. In this study, the population used was all 26 employees of PT. X. The saturated sampling technique is a technique for determining a sample, where all members of the population are included as samples, provided that the population is less than 30 people. Therefore, the number of employees determined is the number of 26 employees at PT. X. Data analysis techniques in this study use inferential statistics because this technique is used to analyze sample data from clear populations and the conclusions that are applied to populations based on sample data. Using a scale of ordinal data whose data is composed of levels of respondents from the "lowest level to the highest level" according to certain attributes. Based on the form of hypotheses, this study uses associative hypotheses with Spearman Rank data analysis techniques.

Research Paradigm

To ensure the research is conducted in a focused, thorough, and comprehensive manner, the author considers several research issues that require variable limitations. Therefore, the author limits himself to the topic of "Enterprise Resource Planning Management Information Systems, Work Environment, and Employee Productivity."

The relationship between variables, where the ERP Management Information System indicators (X1): Hardware, Software, Database, Procedures, and Data Communication, while the Work Environment indicators (X2); Employee Relations, Noise Level, Work Regulations, Lighting, Air Circulation, and Security. For Work Productivity Indicators (Y) Willingness, Improving Results, Work Spirit, Self-Development, Quality and Efficiency. Based on the description, a research paradigm can be formulated regarding the influence of management information systems and work environment on employee work productivity, as follows:

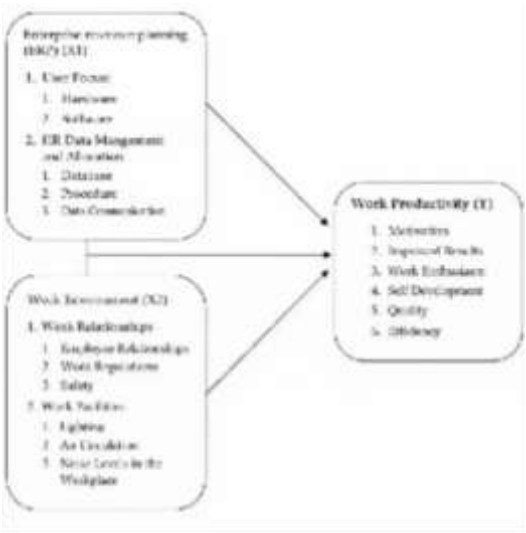

Figure 1. Conceptual Framework

Based on the background above, this research formulates the problem as follows:

H1: ERP management information systems have a significant positive effect on employee productivity. High-quality hardware and software simplify data distribution and task completion.

H2: The work environment has a significant positive effect on employee productivity. Supportive physical conditions and positive work relationships boost employee morale and focus.

H3: ERP systems and the work environment simultaneously influence work productivity.

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Result and Discussion

Corelation Test

Tabel 1. Corelation Test Result

Correlations

		ERP System	Work Environment	Work Productivity
ERP System	Pearson Correlation	1	,318	,814**
	Sig. (2-tailed)		,113	,000
	N	26	26	26
Work Environment	Pearson Correlation	,318	1	,547**
	Sig. (2-tailed)	,113		,004
	N	26	26	26
Work Productivity	Pearson Correlation	,814**	,547**	1
	Sig. (2-tailed)	,000	,004	

**. Correlation is significant at the 0.01 level (2-tailed).

Source : SPSS 20 result

Correlation Test of the ERP System (X1) against Work Productivity (Y)

Based on Table 1.1, the correlation test results for the ERP system (X1) against work productivity (Y) are 0.814, with a significance level of 0.000. Therefore, from this calculation, it can be concluded that a significance value of 0.000 < 0.05 indicates a significant correlation between the ERP system (X1) and work productivity (Y). According to Priyatno (2016), when viewed based on the magnitude of the correlation using the relationship level, the ERP system (X1) and work productivity (Y) have a correlation of 0.814, categorized as a perfect correlation. This aligns with the influence of the ERP system at PT. Fujicon Priangan Perdana, which serves as the primary system for managing work processes and controlling the work performed by each employee. Therefore, the ERP system at PT. Fujicon Priangan Perdana plays a significant role in controlling employee productivity at PT. Fujicon Priangan Perdana.

Correlation Test for Work Environment (X2) and Work Productivity (Y)

Based on Table 1.1, the correlation test results for work environment (X2) and work productivity (Y) are 0.547, with a significance level of 0.004. Therefore, from this calculation, it can be concluded that a significance value of 0.004 < 0.05 indicates a significant correlation between work environment (X2) and work productivity (Y). According to Priyatno (2016), when viewed based on the magnitude of the correlation using the relationship level, the work environment (X2) and work productivity (Y) have a correlation of 0.547, categorized as a moderate correlation. Descriptive analysis of the "Idea Junction" reports from January to March 2025 highlights critical environmental stressors, including equipment upgrades (RAM) and facility repairs (ceiling leaks and toilet maintenance). These practical obstacles correlate with the statistical finding of a moderate correlation (0.547) for the work environment (X2).

Based on research observations, the work environment is a factor supporting work productivity at PT. Fujicon Priangan Perdana. This factor can influence work concentration and work activities, although the work environment factor does not significantly influence work productivity compared to the ERP system, which controls every employee activity.

Multiple Linear Regression Test Results

According to Priyatno (2016), multiple linear regression is used to test the influence of more than one independent variable on the dependent variable with a significance level of <0.05, then there is a joint influence between the independent variables on the dependent variable. Based on the results of calculations using the SPSS 20 program, the results of multiple linear equations are obtained as follows:

Tabel 2. Coefficients table

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,048	2,513		1,213	,237
	Sistem ERP	,753	,115	,712	6,546	,000
	Lingkungan Kerja	,223	,076	,321	2,951	,001

a. Dependent Variable: Produktivitas Kerja

From this equation can be interpreted:

(b0) = 3.048 This means that if all the variables of the ERP management information system (X1) and work environment (X2) are equal to 0, the level or magnitude of the work productivity variable (Y) is 3.048.

(b1) = 0.753 This means that the number shows the coefficient for ERP management information system variables. The number 0.753 indicates that a positive sign means that if the ERP management information system is increased by 1 unit, the work productivity will increase by 0.753 units.

(b2) = 0.223 This can be interpreted that the figure shows the coefficient of variable work environment. The number 0.223 indicates that a positive sign means that if the work environment is increased by 1 unit, work productivity will increase by 0.223 units.

R^2 (R Square) Test Results

From the test results it can be seen the value of R2 (Adjusted R Square) is 0.734. so it can be interpreted that the contribution of the influence of the independent variables namely enterprise resource planning (X1) and work environment (X2) management information systems on the dependent variable namely work productivity (Y) is 73.4% while the remaining 26.6% is influenced by factors other factors not examined.

Table 3. *R2 (R Square) Test Results*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,869[a]	,755	,734	,964

a. Predictors: (Constant), Work Environment, ERP System

Source : SPSS 20, 2025

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The R2 (R Square) value is 0.755. So it can be interpreted that the contribution of the influence of the independent variables, namely the enterprise resource planning management information system (X1) and the work environment (X2) on the dependent variable, namely work productivity (Y), is 75.5% while the remaining 24.5% is influenced by other factors not studied. This is in accordance with the influence of the ERP system at PT. X which is the main system for the work process and also controls the work carried out by each employee. So the ERP system at PT. X has a very strong role in controlling employee work productivity at PT. X, while work environment factors can affect work concentration and work activities even though these work environment factors do not affect work productivity much compared to the ERP system which does control every employee activity.

Table 4. T Test Results

	B	Std. Error	Standardize d Coefficients Beta	T	Sig
(Constant)	3,048	2,513		1,213	,237
Sistem ERP	,753	,115	,712	6,546	,000
Work Environment	,223	,076	,321	2,951	,001

Based on the calculation results and theory proposed by Priyatno (2016), it can be seen that T count (6.546) > T table (2.068) so Ho is rejected, the conclusion is that the ERP management information system partially influences employee work productivity at PT. X. The ERP System (X1) shows a dominant influence with a coefficient of 0.753. This confirms the theory by Laudon and Laudon (2012) that information systems are vital strategic tools for operational excellence. The T-test result (6.546 > 2.068) confirms that every unit improvement in ERP reliability significantly boosts productivity. This aligns with Monk and Wagner (2013), who argue that ERP integration is the backbone of efficient business processesThe coefficient value and T count are positive, meaning that if the ERP management information system improves, work productivity will also increase at PT. X. This can be seen from the development of the ERP system which has a significant influence on the work process, seen from the maintenance of hardware and adaptation of ERP system software which makes it easier for employees to access work result reporting, control cost settings and ease of data communication to each employee.

Based on Priyatno's theory (2016), the significance level uses a = 5% (0.005), which is a standard measure often used in research. Based on this theory, it can be seen that the significance of 0.000 is smaller than 0.05, so Ho is rejected, meaning that the ERP management information system partially influences employee work productivity at PT. X. This can be seen from the development of the ERP system which is very influential in the work process seen from the maintenance of hardware and adaptation of the ERP system software which makes it easier for employees to access work result reports, control cost settings and ease in communicating data to each employee.

Based on the calculation results above and the theory proposed by Priyatno (2016), it can be seen that T count (2.951) > T table (2.951) so Ho is rejected, the conclusion is that the work environment partially influences employee work productivity at PT. X. The coefficient value and T count are positive, meaning that it has a positive effect, namely if the work environment at PT. X improves, work productivity at PT. X also increases. This can be seen

from the work environment situation at PT. X both internally, relationships between employees, work regulations that must be obeyed by each employee, safety at work, and externally, such as the level of noise in the work environment, lighting and air circulation, which can affect employee productivity directly or indirectly according to the opinions of several employees.

Based on Priyatno's theory (2016) that the level of significance uses a = 5% (0.005) which is a standard measure often used in research. Based on this theory it can be seen that the significance of 0.001 <0.05 then Ho is rejected, the conclusion is that the work environment partially influences employee work productivity at PT. X . This can be seen from the work environment situation at PT. X both internally, relations between employees, work regulations that must be obeyed by each employee, safety at work, as well as externally such as the level of noise in the work environment, lighting and air circulation which can affect employee productivity directly or indirectly according to the opinions of several employees.

Test Results F

So based on this theory and the results of the study above it can be seen that F arithmetic (35,515)> F table (4,279) so Ho is rejected, meaning that is the ERP management information system, and the work environment at PT. X together affect the work productivity of employees.

Table 5. ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	66,010	2	33,005	35,515	,000[b]
	Residual	21,374	23	,929		
	Total	87,385	25			

Source : SPSS 20, 2025

The simultaneous F-test (35.515 > 4.279) proves that technology cannot work in a vacuum; it requires a conducive environment (X2) to reach the 75.5% productivity contribution identified in the R-Square test. According to Priyatno (2016: 63) the F test is used to determine whether the independent variables (X1, X2,... Xn) together have a significant effect on the dependent variable (Y). So based on the theory and the results of the research above, it can be seen that the calculated F (35.515) > F table (4.279) so Ho is rejected, meaning that the ERP management information system and the work environment at PT. X together have an effect on employee work productivity at PT. X . This can be seen from the development of the ERP system which is very influential in the work process seen from the maintenance of hardware and adaptation of the ERP system software which makes it easier for employees to access work result reporting, cost control settings and ease in communicating data to each employee at PT. X , while seen from the work environment situation at PT. X both internally, relationships between employees, work regulations that must be obeyed by each employee, safety at work, as well as externally such as the level of noise in the work environment, lighting and air circulation which can affect employee productivity directly or indirectly according to the opinions of several employees.

According to Priyatno (2016) the F test is used to determine whether the independent variables (X1, X2,... Xn) together have a significant effect on the dependent variable (Y) using a significance level of 0.05. So from the results of the research above and also the theory used, it can be seen that the significance of 0.000 <0.05 then Ho is rejected, meaning that the ERP management information system and the work environment at PT. X together have an effect

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on work productivity at PT. X . This can be seen from the development of the ERP system which is very influential in the work process seen from the maintenance of hardware and adaptation of ERP system software which makes it easier for employees to access work result reporting, control cost settings and ease in communicating data to each employee at PT. X, while seen from the work environment situation at PT. X both internally in terms of employee relations, work regulations that must be obeyed by every employee, safety at work, and externally such as the noise level of the work environment, lighting and air circulation which can affect employee productivity directly or indirectly according to the opinions of several employees.

Conclusion

Based on the results of research and discussion of the influence of enterprise resource planning management information systems and work environment on employee work productivity at PT. X which has been stated previously, researchers can draw conclusions as follows. Based on the results of calculations using the SPSS 20 application, the results are T count (6,546)> T table (2,068) so Ha: b1 ≠ 0, the management information system of enterprise resource planning system partially influences work productivity. Based on the results of calculations using the SPSS 20 application, the results are T count (2.951)> T table (2.951) so Ha: b2 2 0, namely the work environment partially influences work productivity. Based on the results of calculations using the SPSS 20 application, it is obtained that it can be seen that F arithmetic (35,515)> F table (4,279) becomes Ha ≠ 0, meaning that the enterprise information system management resource planning system, and the work environment together affect the on work productivity.

From the results of research on the influence of enterprise resource planning management information systems and work environment on employee work productivity at PT. X which has been stated previously, the research has several suggestions. This research is expected to be useful for companies in evaluating and improving improving management information systems for enterprise resource planning systems at PT. X in order to increase employee productivity in PT. X. This research is expected to be useful for companies in evaluating and improving the work environment at PT. X in order to increase employee productivity in PT. X. The results of this study are expected to be expected to companies so that employee productivity continues to be improved. This can be done by improving the quality of ERP management information systems and the quality of the work environment at PT. X, but there are several factors that need to be considered again by the company.

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