

## INCREASED EMPLOYEE PRODUCTIVITY WITH THE APPLICATION OF e-HRM (Case Studies at Pradita University)

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**Abstract:** This research examines the role of e-HRM (electronic Human Resources Management) in improving employee productivity in higher education. The goal of this empirical study is to confirm and examine this e-HRM usage in higher education. Adaptive structuration theory (AST) is used, to understand the role of e-HRM in improving employee productivity. Social factors and technological characteristics interact to affect group outcomes. AST argues that technology usage provides social structures to engage employees in social interaction that both enable and constrain human action within the firm. Research models are analyzed using linear regression and the result is indeed finding a positive effect of e-HRM usage on employee productivity that supports AST. E-HRM can help to streamline operational HRM activities; accelerate HR processes; improve communication between stakeholders include existed employees, potential employees, and management; reduce administrative tasks and HR staff headcount; and capture, create and transfer some HR knowledge more accurately and speedily for employee training and development. These advantages can help to increase employee productivity.

**Keywords:** e-HRM, electronic human resources management, adaptive structuration theory, AST, employee productivity

### 1. INTRODUCTION

With the current development of technology, organizations especially in the field of human resource management need to implement e-HRM (Electronic-Human resource Management), which is in line with the opinion of Ruel et al. (2007), stating that e-HRM can provide cost reduction, service improvement,

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and reorientation of HR (Human Resource) professionals to become more strategic. Bondarouk and Ruel (2013) found that e-HRM is a phenomenon driven by the discovery of new technologies such as mobile applications and extensive networks that can help improve HRM's function in value creation. Obeidat (2016) also argued that e-HRM can improve the effectiveness of employee performance by simplifying HRM work operations and increasing employee and line manager engagement by shifting responsibility to line managers. This causes decision making in HRM to be based more on employee conditions that are better understood by line managers and employees compared to HR staff.

In previous literatures, the concept of e-HRM was described as a concept that can increase the efficiency and effectiveness of HR activity and transaction administration using internet technology (Voermans and Van Veldhoven, 2007). In its development, Bondarouk and Brewster (2016) explained that e-HRM focuses on integrating all mechanisms and content in HRM that are connected with the latest information and technology to improve HRM processes more consistently and efficiently. Marler and Parry (2016) added that e-HRM is a system that integrates hardware, software, and electronic networks to carry out HRM activities to coordinate individuals and working groups with different geographic regions, job levels, and functions into the same HRM area. With the implementation of IT that digitizes and automates the administration of HRM functions, employees can spend more time and focus on HRM activities to implement HRM policies more effectively and improve the performance of the organization.

However, the application of e-HRM is not easy. This is due to management's lack of awareness about the importance of e-HRM in increasing employee productivity and limited research related to the contribution of e-HRM in increasing employee productivity. Various research stated that the role of e-HRM in increasing employee productivity is still very slow (Strohmeier, 2007). Some research on the importance of e-HRM is often associated with improved HR service departments in creating value. Employee productivity is more important than HR department services in improving organizational competitiveness (Arye et al., 2013).

In addition, research related to the role of e-HRM in increasing employee productivity in higher education institutions is still very limited even though human capital in higher education institutions is a core business that becomes the competitiveness of organizations in facing competition. To confirm the importance of e-HRM in increasing employee productivity in higher education institutions, this study will examine the direct influence of e-HRM on employee productivity at Pradita University.

## 2. LITERATURE REVIEW

### 2.1 E-HRM System

In studying e-HRM, it is necessary to know the function of HRM. HRM is a management function that aims to ensure the number of employees and organizational structures is fulfilled and available at the right time and the right position at an affordable cost, where the available employees will be motivated to achieve the organization's current and strategic goals (Ma and Ye, 2015). Initially, the implementation of HRM activities was carried out with the support of the human resources information system (HRIS). HRIS refers to the systematic procedure for collecting, storing, maintaining, updating, and discharging of an organization's human resource data where the data can only be accessed by the HR department (Ruel et al., 2004). In its development, HRM information system was developed using internet technology known as e-HRM. e-HRM refers to the application of strategies, policies, and practices related to human resources in organizations that depend on the use of internet technology where human resource data is not only accessible to HR department staff but also accessible to other employees, potential employees, and management (Martinovic, 2011). In other words, the difference between HRIS and e-HRM lies in the accessibility of data whereas HRIS can only be accessed by HR department staff while e-HRM can be accessed by other users as well as those with an interest in corporate HR data (Ruel et al., 2004).

In the application of e-HRM, Lepak and Snell (1998) explained that there are three levels of categories of its use purposes for HRM, namely operational, relational, and transformational. Operational level refers to the objectives of data

administration efficiency related to employee payroll and employee personal data, e-HRM can make the work operations of HR staff easier, time-efficient, and cost-efficient where employees can update their respective personal data into the network. Thus, the implementation of e-HRM can speed up the process of obtaining the latest data, reduce work-related to HR staff administration, and reduce the number of excess HR staff (Ruel et al., 2004).

Relational level on the application of e-HRM refers to the use of IT in HRM aims to establish HRM process business with interested parties related to employee recruitment, employee training, and employee performance management (Ruel et al., 2004). HR department staff can easily advertise the required job positions on the company's website and potential employees can apply for the position by going over the internet (Barber et al., 2018). In addition, HR staff can develop and implement employee training more easily by spreading questionnaires on employee competency needs to management and provide online training materials (Barber et al., 2018). Then, HR staff can also more easily calculate employee performance and proper compensation by getting the latest internal and external information online. Karoliny and Poor. (2017) described HRM Activities that CAN be supported by IT by applying e-HRM presented in table 1 as follows:

**Table 1 IT Applications in Implementation of Human Resources Management Activities**

HRM Activities	HRM Tasks	E-HRM support
Administrative Support	Recording of Employee primary data (attendance, absence, salary)	Database management, attendance recording system, attendance registration with network.
Recruitment	Process planning, documentation and implementation of recruitment	Creating online job advertisements, registration, and management of application data from online advertisements, online application forms, implementation of online selection tests, and use of social media networks for candidate analysis.
Training and development	Reviewing the education and development needed by employees, planning training programs, organizing training, storing learning materials.	Online questionnaire of employee competency needs, analysis of employee development trends, data management of learning materials, and implementation of e-learning programs
Individual Performance Management	Performance measurement	Documentation, analysis and feedback on employee performance via the internet
Compensation	Making salary structure, salary modelling, compensation level analysis	Analysis and calculation based on internal and external information
HR Planning	Manpower requirements planning, employee fluctuation statistical analysis	Trend Analysis, model simulation.
Job Analysis	Data management description and specification of business processes, organizational structure analysis	Documentation of job analysis results, visualization of the current and planned organizational structure

Source: Karoliny and Poor, 2017

At the third level, the application of e-HRM aims to be transformational where the use of IT is aimed at supporting the realization of HRM activities that have strategic interests for the company such as knowledge management and employee development in alignment with the company's strategic objectives, virtual support for the team, exchanging employee information useful for the formulation and implementation of company strategies (Ruel et al., 2004).

## 2.2 Employee Productivity

Employee productivity refers to how efficiently a company's workforce works (Datta et al., 2005). Bernolak (1997) defined employee productivity as how much and how well employees produce production output from the resources used. If employees produce more and better goods or services from the same resource, then it can be stated that productivity increases. Alternatively, if employees produce the same number of goods and services with fewer resources, then it is also said that productivity increases. Ferreira and Plessis (2009) defined employee productivity as the amount of time employees spend completing a job, to generate the expected outcomes of an employee's job description. In this study, employee productivity was defined based on the perception of line managers on the increase in employee outcomes or decreased resources used to produce outcomes in the presence of e-HRM.

Iqbal et al. (2018) explained that employee productivity is not only related to measurement from an economic point of view but from other aspects, so that employee productivity can be reflected by absenteeism/presenteeism, quality/quantity work, task productivity, and innovation productivity.

## 2.3 E-HRM and Employee productivity

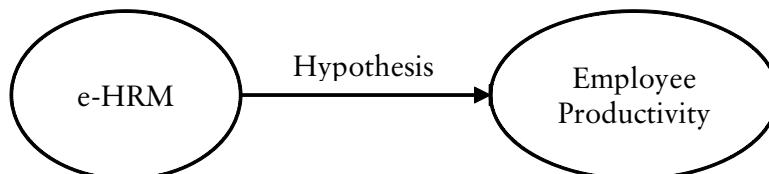


Figure 1 Hypotheses

### 3. RESEARCH METHODS

This research applies quantitative methods in data analysis. Research data is taken with surveys, for statements related to variables. The data was collected at Pradita University. In sampling, the method used is census sampling and found the number of line managers at Pradita University is 33 managers. To analyze the effect of e-HRM on employee productivity, a linear regression model is used, with the following formula:

$$\text{Employee Productivity} = a + b \text{ e-HRM} + e_i \quad (1)$$

Description:

Employee Productivity = variable bound, abnormal value return of company in the year in which

b = Coefficient/Slope of research model

a = Research model constant

e-HRM = Respondents' perception of the application of e-HRM at Pradita University

Ei = Error Term

Survey questions explained the diagnosis variables of several previous studies where e-HRM that was adopted from Iqbal et al. (2018) aimed at the perception of line managers on the application of e-HRM with examples of the questions "Pradita University uses Portals to regulate employee benefits", "We use Portals for recruitment and new employee selection processes," and "We use portals for online learning and tests". Employee productivity adopted from Iqbal et al. (2018) aimed at the perception of managers on employee productivity with the implementation of e-HRM, the question used is as follows: "Using the Employee Performance Portal make us work more effectively", "Portal makes our work easier", and "Portals can make employees and managers be more focused on their main tasks."

### 4. RESULT AND DISCUSSION

The results of exposure to research respondent data can be seen. The sample used in the study consisted of 33 respondents as line managers at Pradita University. 57.58% are women and 42.42% are men, where most respondents are aged 26-30 years (33.33%), while the rest are 46-50 years (18.18%) and 31-

35 years (15.15%). Most respondents' education levels were S2 (48.48%), S1 (21.21%), and S3 (12.12%).

Validity tests were conducted to test the accuracy of questionnaire question items in measuring research variables. The technique used is the correlation of *Pearson product moments*. A question item is declared as valid if the *Pearson's product-moment* correlation results in a correlation value ( $r$  count)  $>$   $r$  table.

The result shows that all question items on the e-HRM variable as well as on the employee productivity bound variable have a table  $>$   $r$  count (0.3440). Based on these results, all question items that measure research variables are declared as valid and are included in the next analysis process. Then, reliability test results showed Cronbach alpha values of all research variables as greater than 0.6, where the value according to Malhotra (2010) showed that the question items in the study were reliable in explaining variables. Cronbach alpha variable of e-HRM is 0.910 and employee productivity is 0.909. The value is greater than 0.60 so it can be stated that the question item on the research variable is reliable.

The normality test is performed to detect residual normality produced by the regression model. Detection is carried out by *the Kolmogorov Smirnov test*. If the significance value of *the Kolmogorov Smirnov test*  $>$  0.05 ( $\alpha=5\%$ ), then the residual regression model is considered as normally distributed. Below are the normality test results:

Table 2 Kolmogorov Smirnov Test

	Unstandardized Residual
Kolmogorov Smirnov Z	0.606
Nilai Signifikansi	0.856

Table 2 shows that the significance value of the Kolmogorov Smirnov test is  $0.856 > 0.05$ , which suggests that the study data does not prove to be significant in the fact that the residual regression model is normally distributed.

Multicollinearity tests are performed to detect the absence of a strong correlation between free variables in regression models. Detection is done by looking at the value of *tolerance* and *VIF*. If the *tolerance* value is  $> 0.10$  and *VIF*  $< 10$ , the regression model is free of multicollinearity. Below is the result of the multicollinearity test:

Table 3 Multicollinearity Test

Variabel e-HRM (X)	Tolerance	VIF
	1.000	1.000

### Autocorrelation Test

Autocorrelation tests are performed to detect the absence of correlation between observations. Detection was carried out with the Durbin-Watson test. If the resulting Durbin-Watson regression value lies between  $d_U$  and  $4-d_U$  values, then there is no autocorrelation in the regression model.

Below is the result of the autocorrelation test:

Tabel 4 Autocorrelation Test

Nilai Durbin Watson	Tabel Durbin Watson $d_U$	$4-d_U$
2.403	1.3834	2,6166

The  $d_U$  value obtained from the Durbin-Watson Table with  $n = 33$  and  $k = 1$  (the number of free variables) is 1.3834. So, it obtained a value of  $4-d_U$  of 2.6166. Then, the Durbin-Watson value obtained from the regression result is 2,403, which is located between the value of  $d_U$  (1,383) and the value of  $4-d_U$  (2,617). Therefore, it is concluded that there is no autocorrelation in the regression model.

### Multiple Linear Regression Analysis

Multiple linear regression Analysis is performed to determine the effect of e-HRM on employee productivity. The following are the results of the multiple linear regression analysis

Tabel 5 Multiple Linear Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
	B	Std. Error				Tolerance	VIF
1 (Constant)	1.764	.822		2.146	.040		
EHRM	.505	.166	.479	3.037	.005	1.000	1.000

This research consists of one independent variable and one dependent variable. Based on Table 5 above, it can be seen that the relationship between e-HRM and employee productivity has a significance value of 0.005 and a beta coefficient value of +0.479. This shows that e-HRM has a positive relationship to employee productivity. Therefore, it can be said that the e-HRM variable (X) has a significant positive effect on employee performance (Y) or in other words, what is proposed in this study is accepted.

Based on the result, the use of better e-HRM practices will significantly increase employee productivity at Pradita University. e-HRM practice at Pradita University really helps simplify various human resource management administrative activities, such as attendance, leave, salary calculations, training, employee recruitment, and others that were previously done manually. Pradita University employees can focus more on strategic work and no longer be burdened by human resource management administrative activities.

The results of this study are in accordance with the results of research by Iqbal et al. (2019) which found that the use of e-HRM practices can have a direct and significant positive effect on employee productivity. In addition, the results of this study also confirm the results of Bondarouk et al. (2017) which states that e-HRM can create added value for companies by increasing the effectiveness of HR management practices and accelerating the process of HR activities so that employees can more easily and quickly achieve organizational goals. The results of this study also support the results of research by Marler and Parry (2015) which stated that e-HRM can help organizations increase employee productivity by implementing HR activities more quickly and making employees other than HR more focused on their main obligations, so that employees can complete their work faster and better. The results of this study are also supported by the results of research by Obeidat (2016) which stated that e-HRM can help companies implement HRM activities more strategically and efficiently by carrying out activities with online applications, HR can conduct training and development with e-learning without having to accommodate an online application. Employees can improve skills without having to meet in person so employees can focus on core work without having to take up their time. In addition, the results of this study are also supported by the results of Wahyudi and Park's (2014) research which stated that the use of e-HRM practices can

help organizations create more value in business processes by using new ways of implementing HR activities that can increase employee productivity in Indonesia.

From the results of the questionnaire, the statement that has the lowest mean value is “e-HRM is used to convey complaints and grievances”. This needs to be taken as an input for Pradita university management to be able to improve the function of e-HRM as a means of filing employee complaints. In addition, Pradita University can also improve the function of e-HRM as a portal that can be used by employees as a learning facility where employees can discover the rules and policies of Pradita University and learn about the company’s goals.

## 5. CONCLUSION

The conclusion that has been obtained from this study is that the use of e-HRM practices has a significant positive effect on employee productivity. Thus, the results of this study can state that the more e-HRM practices are used, the higher the productivity of employees will be.

In conducting the research, the object of research used is a higher education institution, namely Pradita University. Generally, in researching the relationship between variables, it will be more accurate to use a bigger research object. In addition, this study only examines the direct effect of e-HRM on employee productivity. Several theoretical concepts examine the mechanism of the effect of e-HRM on employee productivity with mediating variables such as the quality of HR services, employee trust in the system and other variables that can moderate the effect of e-HRM on employee productivity.

In the development of research, it is suggested that this research be developed by considering mediation and moderation that affect the direct effect of e-HRM on employee productivity. In addition, further research is expected to be able to use the research object of higher education institutions that are wider and spread out throughout Indonesia to reflect the population more accurately. The suggestion for Pradita University is to use more e-HRM practices, not only at the operational and relational levels but also at the transformational level to formulate HR Planning and Job Analysis.

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