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Application of Artificial Intelligence in Human Resource Management for Remote Worker

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Abstract: The purpose of this study was to determine the application of artificial intelligence in human resource management for remote workers in Indonesia. The research method used is quantitative descriptive and verification with data collection techniques through observation, interviews, and questionnaires. The sample in this study were rookie hosts at PT Kurnia Bumi Raya Manajemen as many as 157 respondents. The data analysis technique uses statistical applications in the form of SPSS. Based on the results of data analysis, the digital literacy variable has a positive and significant effect on productivity. Whereas, technostress has no effect on remote worker productivity. Simultaneous Significant Test results show that digital literacy and Technostress simultaneously have a significant effect on productivity.

Keyword: Digital Literacy, Technostress, Productivity, Remote Worker

INTRODUCTION

Artificial Intelligence (AI) has come a long way and is affecting various aspects of human life. AI technology is now expanding into many sectors, including industry, healthcare, and education. Artificial intelligence refers to the ability of devices to copy and perform activities that would normally require human intelligence. Artificial intelligence (AI) refers to technology that allows machines to learn from existing data. It also allows machines to automatically adjust and improve their algorithms without the need for human intervention. The result is machines that can perform a variety of tasks that would normally be performed by humans. Human Resources (HR) must be able to adapt and improve their performance by utilizing artificial intelligence. The application of AI in HR operations can increase HR productivity by 0.8% to 1.4% annually.

Artificial intelligence (AI) supports human resources in handling administrative work that previously took up almost half of their time and energy. By enhancing the performance of human

resources, AI helps to improve the quality, effectiveness, and efficiency of work, and reduce errors that usually occur due to human factors. The advent of Artificial Intelligence has overhauled the way companies conduct their operations, both from an internal and external perspective. More than 80% of global companies recognize the importance of adopting artificial intelligence across all aspects of their business. Therefore, it is not surprising that AI is a major trend in the business world today (Tahar et al., 2022).

According to remoteskills.academy data, Indonesia is fifth in the ranking of top countries in Asia Pacific for remote working in 2022, with an overall score of 74 out of 100. This Asia Pacific region, surpasses South Korea, Australia, and Singapore. In addition, Indonesia ranks 20th globally, surpassing the Netherlands, Turkey, the United States, and New Zealand. This productive activity allows individuals to earn income from anywhere without the need to be present in the office, known as remote workers. Reporting from the website remote skilss academy.com. According to LinkedIn's analysis of work trends in 15 countries, one of which is Indonesia, the most popular jobs can all be done remotely. According to a report from the World Economic Forum, 84% of employers have plans to expand the use of remote work. One of the results of artificial intelligence is its ability to replace the role of Customer Service that is unable to serve 24 hours, which can be replaced with AI technology in the form of Chatbot. This AI technology can automatically answer questions correctly, such as finding information more nimbly, summarizing ideas, or helping find sources for schoolwork. This further shows how useful artificial intelligence technology is in everyday activities (Adamy, 2016).

Remote working is a work model in which employees complete some or all of their tasks from a location different from the company office. Remote working refers to an arrangement where employees live and work outside the physical office of the company that employs them (Li et al., 2022). Working remotely can save time for those who usually have to travel long distances to work and provide them with opportunities to do activities other than work (Anderson & Kelliher, 2020). Working from home includes sub-categories such as teleworking and telecommunications. Remote work refers to conditions where work is done wholly or partially outside the office, while telecommunications is an option where employees perform tasks in places other than their office. (Tucker et al., 2023).

Remote working or work from home offers more flexibility in how and where employees complete their tasks, which can improve work-related attitudes and performance (Zhang et al., 2021). Remote workers, often referred to as work from home, are usually supported by facilities provided by the company or technology created to facilitate task completion.

Productivity is not only measured by the quantitative achievement of organizational targets, but also as a mental attitude possessed by workers in the organization. Work productivity is a mindset that continuously strives to ensure that today's life is better than yesterday, and tomorrow is better than today. (Nasem et al., 2020). Work productivity does not arise by itself, but must be pursued by employees in the organization, which is expected to contribute to the achievement of organizational goals.

Digital literacy refers to the skills in using information technology effectively and efficiently on digital tools in various situations, such as education, work, and daily activities (Sedán et al., 2020). People who lack confidence and feel anxious about computers may have difficulty accepting or understanding the use of computer devices (Rosmita Rasyid, 2022). Digital literacy is not only about the ability to utilize computers, but also about understanding and interpreting information spread across various digital platforms. Digital literacy includes skills in operating technology and computers, as well as the ability to obtain information through technology and communication channels (Dahlström et al., 2023).

Based on the Indonesia Digital Literacy Status survey, conducted by the Ministry of Communication and Informatics together with the Katadata Insight Center (KIC), it was stated that Indonesia's digital literacy index increased in 2022. In 2020, Indonesia scored 3.46 points, which then rose to 3.49 points in 2021 (an increase of 0.03 points). In 2022, this score rose again by 0.05 points, from 3.49 to 3.54 points. This score indicates that digital literacy in Indonesia is at a moderate level. The assessment was conducted using four pillars: digital skills, digital ethics, digital safety, and digital culture. Of the four pillars, three improved from the previous year: digital skills from 3.44 to 3.52, digital ethics from 3.53 to 3.68, and digital safety from 3.10 to 3.12. However, the digital culture pillar decreased from 3.90 to 3.84.

Stress is a negative reaction that a person experiences due to pressure, especially those caused by excessive demands, constraints, or opportunities (Robbins and Coulter, 2016). Technostress is a form of physical, behavioral, and mental stress that arises in response to dependence on information and communication technology, as well as increasing complexity and technological change (Atannasoff and Venable, 2017). Technostress is experienced by individuals who are unable to handle the demands of using information and communication technology (ICT) in an organization (Tarafdar et al., 2010). Technostress is considered a modern-day disease that arises from the inability to manage or handle information and communication technology in a healthy way (Brod, 1986). Technostress is a computer-related consequence that arises from the use of technology in work, which can lead to mental and emotional problems. (Arnetz & Wiholm, 1997).

The formulation of the problem in this study is based on the background stated above, the researchers formulated the problem is How digital literacy and technostress affect productivity of remote worker in Indonesia partially and simultaneously.

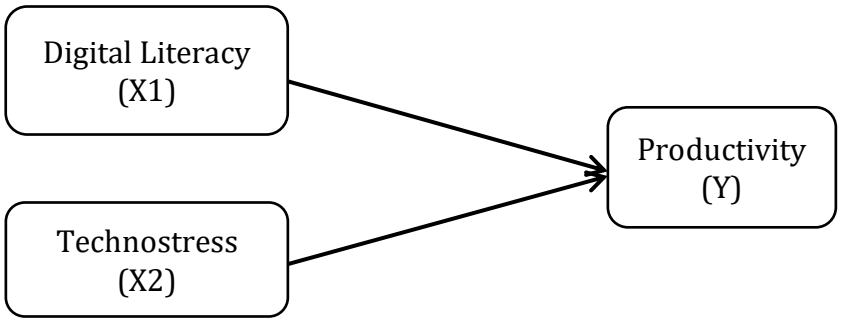

Figure 1. Research Framework

METHOD

The research method that will be used in this research is a quantitative approach with the application of descriptive and verification methods. According to Sugiyono (2022), the descriptive method is used to analyze the data collected by describing the state of the value of one or more variables in detail. The purpose of this method is to answer questions about the application of intelligence in human resource management for remote workers in Indonesia, through digital literacy and technostress as independent variables, and productivity as a dependent variable. This study uses primary data sources obtained through questionnaires that are used in this study distributed to 157 Remote workers of Host Rookie PT Kurnia Bumi Raya Management. Data analysis was carried out using the SPSS Version 26 program.

RESULTS AND DISCUSSION

Table 1. Respondent Profile

Characteristics	Category	Number	Percentage
Gender	Men	39 %	24,8%
	Women	118%	75,2%
Age	≤ 20 year	14	9%
	21-25 year	119	76%
	26-30 year	9	6%
	31-35 year	6	4%
	36-40 year	6	4%
	>40 year	3	1%
Education	Sma/smu	95	60,5%
	Diploma	4	2,5%
	Sarjana (S1)	56	35,7%
	Magister (S2)	2	1,3%
Working Period	< 1 year	78%	49,7
	1-2 year	50	31,8%
	3-4 year	17	10,9%
	>5 year	12	7,6%
Type of Work	Main	28	17,8%
	Side	129	82,2%

Source : SPSS Data (2024)

Multiple Linear Regression Analysis

Table 2. Multiple Linear Analysis Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.299	3.301		2.211	.029
	Literasi Digital	.355	.049	.507	7.309	.000
	Technostress	-.058	.070	-.057	-.829	.409

Source: SPSS data (2024

Based on the calculation data of the regression analysis results, the coefficient for the digital literacy variable is 0.355, while the coefficient for the technostress variable is - 0.58 and the constant is 7,299, so that the regression equation model obtained is as follows:

Y = 7.299 + 0,355 X1 - 0, 058 X2

Based on this equation, it can be interpreted as follows:

1. It is known that the constant value is 7,299. This value means that if the digital literacy (X1) and technostress (X2) variables affect the dependent variable, namely productivity (Y), then the value of the dependent variable productivity is 7,299. This means that without taking into account the influence of digital literacy and technostress, the regression productivity level will remain at the base value of 7,299.

2. It is known that the regression value of the digital literacy variable is 0.355 which is positive, this can be interpreted that when digital literacy increases by 1 unit, productivity tends to increase by 0.355.
3. The regression coefficient value of the technostress variable is -0.058 which is negative, this means that when technostress increases by 1 unit, productivity tends to decrease by 0.058.

Hypothesis Test Significance T (Partial)

Based on the t test results in table 2, the following can be obtained:

1. Digital literacy (X1) has a positive effect on productivity (Y) with a coefficient value of 0.355 t - Count 7.309> t Table 1.654 Sig value = 0.000 <0.05. This is in line with the research of Fauziah et al., (2023) which shows that digital literacy has a significant effect on employee work productivity. This study provides results, the greater the effect of digital literacy on employee work productivity, the better the employee performance.
2. Technostress (X2) has no effect on productivity (Y). It shows based on Sig value = 0.409, which is greater than 0.05. This is in line with the research results of Saputra and Natalia (2021) that technostress has no effect on productivity.

Hypothesis Test Significance F (Simultaneous)

Table 3. Hypothesis Test of Significance F (Simultaneous)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	721.949	2	360.974	27.024	.000[b]
	Residual	2057.057	154	13.358		
	Total	2779.005	156			

Source: SPSS data (2024)

Based on table 3 above, this can be seen from the calculated F value which is 27,024. While the resulting significance value is 0.000 which is smaller than 0.5. Thus it can be concluded that the model that this multiple regression model is feasible to use and the independent variables which include the influence of (X1) digital literacy, (X2) technostress on the work productivity of remote workers. Simultaneous test calculation results, it is known that the F-Count value is 27.0> 3.055 (F-Table) and with a significance level <0.05, meaning that the digital literacy and technostress variables have a positive and significant effect on the work productivity of remote workers simultaneously.

Coefficient of Determination Analysis (R^2)

Based on the calculation of the Coefficient of Determination (R^2), the R Square value is 0.250 or 25%, meaning that digital literacy and technostress have an influence of 25% on remote worker productivity. The rest is influenced by other factors such as work life balance and job satisfaction which are not discussed in this study.

CONCLUSION

1. Based on significant tests, digital literacy has a significant positive effect on employee work productivity. This study provides the results that the greater the effect of digital literacy on employee work productivity, the better the employee's performance. Whereas technostress has no effect on remote worker productivity.
2. The results of the Simultaneous Significant Test (F test) digital literacy and technostress simultaneously have a significant effect on productivity.

3. Based on the test results of the coefficient of determination (r-square adjusted) of the remote worker's work productivity of 0.250, This means that the ability of the independent variables in this study, namely digital literacy and technostress, is able to influence the productivity variable by 25%, while the rest is explained by other variables besides the independent variables in the study.

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