

The Relationship between Digital Culture and Employee Performance in PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng

Fenycia Utari Firstianti Medah¹, Achmad Fajar Hendarman²

¹(School of Business and Management, Institut Teknologi Bandung, Indonesia)

²(School of Business and Management, Institut Teknologi Bandung, Indonesia)

*Corresponding Author: Fenycia Utari Firstianti Medah¹

ABSTRACT: The phenomenon of the "fourth industrial revolution" or "Industry 4.0," as noticed by the disruptive innovation phenomenon, focuses on digital economic patterns, artificial intelligence, big data, and robotics. The Indonesian Ministry of Industry strongly encouraged the development of "Industry 4.0". In 2022, as one of the best state-owned enterprises, PLN won the Indonesia Industry 4.0 Readiness Index (INDI 4.0) Award from the Ministry of Industry, Republic of Indonesia. The new face of PLN as a 4.0 industry is a cultural transformation, and that's digital culture. It means their workplace is shaped and influenced by digital tools and technologies. Moreover, since PLN is considered "the heart of Indonesia", employee performance in PLN is really crucial. PLN as a 4.0 industry has indeed implemented digital cultures in their companies to support their employees in doing work, getting information, and communicating. The implementation of digital culture in PLN is relatively good but not optimal, while the employees have to perform well with all these changing technologies. Some employees are still lacking in knowledge related to digitalization and are finding it difficult to adapt. In order to meet the challenges of the 4.0 Industry, the relationship between digital culture and employee performance in PLN should be examined, as they won the INDI 4.0. It's also because performance among employees can be raised through an optimal digital culture. This research was conducted using quantitative approach. The findings revealed that there is a positive and significant relationship between digital culture and employee performance.

KEYWORDS -Industry 4.0, Digital Culture, Employee Performance

I. INTRODUCTION

Industry 4.0 as noticed by the disruptive innovation phenomenon, focuses on digital economic patterns, artificial intelligence, big data, and robotics. The Ministry of Industry in Indonesia strongly encouraged the development of Industry 4.0. As a result of the growth of information and communication technology, Indonesia has begun to enter the new era of Industry 4.0 since 2016, which is characterized by an increase in connectivity, interaction, and convergence of people, machines, and other resources. Moreover, the government, through the Ministry of Industry, is currently framing the roadmap Making Indonesia 4.0 to implement strategies while entering the industry 4.0 era. In order to achieve the target of Industrial 4.0 through Making Indonesia 4.0, the five manufacturing sectors that will be a pilot to strengthen the fundamentals of the country's industry structure are the food and beverage industry, the automotive industry, the electronic industry, the chemical industry, and the textile industry (Kementrian Perindustrian Republik Indonesia, 2018). In the digital age, shortcomings in organizational culture are one of the main barriers to company success (Goran et al., 2017). All companies and organizations in Indonesia, including state-owned enterprises, have been attempting to improve organizational cultures over the past few years by discarding traditional ones and instead focusing on innovative management and digital approaches.

As one of the best state-owned enterprises, PT. PLN (Perusahaan Listrik Negara) won INDI 4.0 from the Ministry of Industry in 2022. With the award and score given by the Ministry of Industry, PLN is considered ready for Industry 4.0. PLN step in carrying out digital transformation is an adaptive and responsive step in answering global challenges. The new face of PLN as a 4.0 Industry is a cultural transformation, and that's digital culture. It means their workplace is shaped and influenced by digital tools and technologies. Because the company's workplace meets the requirements and needs of employees, it can improve employee performance so they can work well and in accordance with what the company's management expects. In research done by Ferdian and Rahmawati (2019), it was stated that digital culture also had a positive influence of 39.5% on employee performance. Moreover, employee performance in PLN is really crucial since PLN is considered "the heart of Indonesia".

In order to find out the phenomenon of digital culture in PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng, the researcher distributed preliminary study questionnaires to 50 random employees, whose results are shown in Table I.1. Since nobody strongly disagrees and 75,71% of employees agree, it could be concluded that in general, the digital culture implemented in PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng has been implemented well, yet it's still not optimal because there are still 23,71% of employees who feel "in between". It means some employees are somewhere between agreeing and disagreeing because they just feel "so-so" towards the digital culture. A few employees even show disagreement towards the digital culture, the table shows there are still 0,57% of employees who feel that the implementation of the digital culture isn't optimal. Even though it's a small percentage, it proves that there are a few employees who don't even have any idea about the implementation of digital culture in their workplace.

According to the unit employee performance score in 2019-2021, we can interpret that the employee performances in 2019 – 2021 in PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng are potential but almost optimal, meaning that the performances are not yet optimal. As a disclaimer, the performance in 2022 is not yet done because it's still in the scoring process. Although their performance has improved for three years in a row, they still need to implement some solutions and changes to achieve their full optimal or even very potential. Seeing as PLN has been a 4.0 company since 2022, an optimal digital culture might be needed to support their employees' performance.

The community and leaders' influence are required to create an optimal digital culture. We have to know that digital transformation is sweeping the business landscape. That's why leaders should embrace it wholeheartedly because they recognize its power. Employees with fewer skills and competencies have the most difficulty adapting to changes in this digital era. Meanwhile, employees, as important actors in innovation, will be allowed to perform their jobs at an individual level if they have skills based on their job requirements (Hendarman&Cantner, 2018). Besides that, being adaptive is hard when employees aren't aware of changes and transformations. Paying more attention to those who seem hard to understand about digital culture is one way to make the culture run more optimally, so they can perform their job much better in this digital era.

II. LITERATURE REVIEW

1. Theoretical Foundation

1.1 Digitalization, Digitalization, Digital Transformation

Digitalization process starts from digitization. In the process, digitization requires time, energy, cost, and demands the existence of experts who master the technique, while the digitalization process is the next process after digitization itself (Cahyarini, 2021). It can be simply said that digitization is the process of converting information into a digital format. According to Ismail (2020), Indonesia is currently in the digitalization stage (Industry 4.0) which has utilized information and communication technology with business processes in gaining profits from the content that has been digitized. That's why dynamic leaders who are able to innovate based on digital technology are needed in this digital era, it also means their thoughts must also lead the digital mindset (Hoerudin, 2020).

Loonam et al. (2018) interpreted digital transformation as a process of utilizing existing digital technology such as virtualization technology, mobile computing, cloud computing, integration of all systems in organizations and so forth. Hinings et al. (2018) defined digital transformation as a combination of produced digital innovations, causing changes to structure, values, processes, positions or ecosystems within the organization and the environment outside the organization. According to Morakanyane et al. (2017), Digital transformation is an evolutionary process that uses capabilities and digital technology to create or change business processes, operational processes, and customer experiences in order to create new value.

Considering all of this, it is possible to conclude that the process of digital transformation is how businesses or organizations integrate technologies into every aspect of their operations in order to effect massive change. It can be simply defined as the process of using digital technologies in all areas of a business to create new business processes, cultures, and customer experiences to meet changing business and market requirements or customer needs. Improved company agility and flexibility, increased productivity, and eventually the creation of new value for stakeholders including employees, clients, and shareholders are all advantages of digital transformation.

1.2 Industry 4.0

Saucedo-Martinez (2018) defined Industry 4.0 as an integrating sophisticated technology with sensor and software networks to better forecast, manage, and improve societal outcomes. Hendarman et al. (2020) defined the concept of Industry 4.0 as the dependency on the integration of communication and information technologies, industrial technologies, and Cyber-Physical System (CPS). Gubán and Kovácsin 2017 presented about relevant technologies related to Industry 4.0 conception, such as Cyber-Physical Production Systems (CPPS), Machine-to-Machine (M2M) Communication, Artificial Intelligence (AI), Horizontal and Vertical Integration, Internet of Things (IoT), Big Data, Cloud Services, Cyber Security, Virtual Reality and Simulation.

1.3 Digital Culture

The use of digital technology at work increases productivity and broadens the range of goals that may be accomplished, having a significant impact on workplace culture (Buchanan et al., 2016). Digital culture is a basic assumption that underlies, is strongly rooted, values, beliefs, and norms that characterize how an organization encourages and supports the use of technology to complete work in the most effective way (Microsoft, 2018). This digital culture refers to the influence of the culture of the new media environment and the digitalization process, where according to several approaches, digital culture has emerged as a new media phenomenon (Yegen, 2019). Meanwhile, according to Türkoğlu and Türkoğlu (2019) briefly digital culture is a new form of culture formed with digitalization. According to the explanations presented by the experts or literature above, it can be said that digital culture refers to the values, norms, and behaviours that an organization has adopted. It is made up of a variety of characteristics or beliefs that support and encourage the use of technology to complete job effectively. In this study, researchers used seven attributes or dimensions in digital culture which are proposed by Buvat et al. (2017), such as innovation, data-driven decision-making, collaboration, open culture, digital-first mindset (digitalization), agility and flexibility, and customer centricity.

1.4 Employee Performance

Employee performance is the work output and behavior of an individual who has succeeded in finishing the duties and responsibilities assigned within a specific time frame (Kasmir, 2016). According to Priansa (2017), employee performance is a measure of skill in the form of actual work or work results attained by employees as a result of accomplishing the duties and responsibilities given to them by the employer. Umam (2018) defined employee performance as the outcome of work completed by people in line with their tasks or duties within a specific timeframe, which is connected to a specific size or standard of the organization where the employee stands. To conclude, employee performance is a result of the work or task that an organization assigns to its employees over a specific time period in order to fulfil organizational goals. In this study, researchers took measurements of employee performance appraisal using work standards, can be measured through dimensions down below (Bangun, 2012), such as workloads, quality of work, timeliness, presence, cooperation ability.

2. Conceptual Framework

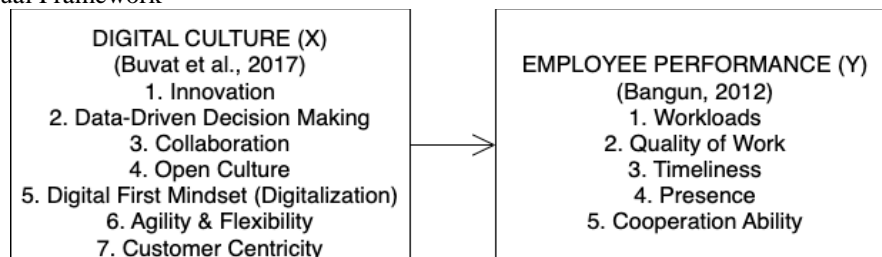


Figure 1. Conceptual Framework

Based on the conceptual framework in Fig. 1, the relationship between the variables can be seen. The independent variable is digital culture in PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng. The independent variable consists of seven indicators or dimensions. The dependent one is employee performance in PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng. The dependent variable consists of five indicators or dimensions. A hypothesis is a temporary statement that connects two variables or more. Below is a hypothesis for this research.

H0: There is no positive and significant relationship between digital culture and employee performance in PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng

H1: There is a positive and significant relationship between digital culture and employee performance in PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng

III. RESEARCH METHODOLOGY

1. Research Design

The data is collected using quantitative approach. Preliminary discussion; literature study; research preparation and data collection; and analysis, findings, conclusion and recommendation are the four stages that make up the flow. The first stage depicts how the research is initiated and carried out. The second stage shows how researchers build study the literatures and make it to the conceptual framework and hypothesis. The third stage shows how the data will be collected. The last stage shows that after processing the data, research will make the analysis, findings, solution and last but not least conclusion followed by recommendations.

2. Data Collection Method

The data is collected using quantitative approach. The quantitative data will be obtained from the results of filling out questionnaires related to digital culture and employee performance in PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng. The survey questionnaire was only filled out by PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng employees. The population for this research survey is obviously the employees, which are 291 people in total. By using the Slovin Formula with 5% margin of error, the sample size in this research is the total of 168 respondents.

3. Data Analysis Method

All data from questionnaire result will be analysed by using Microsoft Excel and Version 27.0 of IBM SPSS Statistical Package for Social Sciences Statistics with some analysis methods down below.

3.1 Descriptive Statistics

Statistical method is used to summarize and describe data. In this study, the central tendencies that would be examined are mean score and average score percentage. Measuring the central tendency of a group of scores is one way to summarize them.

3.2 Data Quality Test

The distribution of questionnaires was used to conduct the data fraud detection test, thus the respondents' willingness and thoroughness in responding to each question was crucial in this study. The selected measurement device determines if an answer is valid. For this reason, the researcher performed a validity and reliability test before doing a data fraud detection test on main data.

3.3 Classic Assumption Test

The classical assumption test is used to determine whether the classical assumption deviations or regression equations used in a study are valid. This classic assumption test used in this research are normality test and heteroscedasticity test.

3.4 Simple Regression Analysis

A regression model called simple linear regression uses a straight line to calculate the association between one independent variable and one dependent variable.

$$y = \alpha + \beta x$$

Figure 2. Simple Linear Regression Formula

Where:

β = slope y = y-coordinate

α = y-intercept x = x-coordinate

3.5 Hypothesis Test

The hypothesis tests used for the data analysis in this research are Pearson correlation, simultaneous testing (F-test), partial testing (t-test), and coefficient determination (R^2).

IV. FIGURES RESULTS AND DISCUSSION

1. Analysis

1.1 Descriptive Statistics

1.1.1 Level of Digital Culture

Table 1. Digital Culture Level

No.	Dimension	Mean Score	Score (%)
1.	Innovation	3.98	79.69
2.	Data-Driven Decision Making	4.03	80.63
3.	Collaboration	3.95	79.02
4.	Open Culture	4.05	80.95
5.	Digital-First Mindset / Digitalization	3.93	78.53
6.	Agility and Flexibility	3.91	78.29
7.	Customer Centricity	3.79	75.80
Average		3.95	78.99

Overall, based on the results, both PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng have a high level of digital culture, with an average score percentage of 78.99% and a mean score of 3.95. In digital culture, the employees have the highest score in "open culture," while the lowest score is in "customer centricity."

1.1.2 Level of Employee Performance

Table 2. Employee Performance Level

No.	Dimension	Mean Score	Score (%)
1.	Workload	4.04	80.75
2.	Quality of Work	3.96	79.29
3.	Timeliness	3.98	79.57
4.	Presence	4.19	83.75
5.	Cooperation Ability	4.05	81.01
Average		4.04	80.87

Overall, based on the results, the level of employee performance in PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng is very high, and the mean score of employee performance is high, with the average score percentage of 80.87% and followed by the average mean score of 4.04. In employee performance, the employees have the highest score in work presence, while the lowest score is in quality of work, but it's still considered a high score.

1.2 Data Quality Test

1.2.1 Validity Test

The results of the validity test of the digital culture variable and employee performance stress refer to the corrected item correlation column in SPSS. The correlation values of each question from all variables are greater than r_{table} which is 0.1506, so the conclusion is that the questions of digital culture and employee performance are above 0.1506-oriented, so that it can be concluded that all questions of the variables are valid.

1.2.2 Reliability Test

The results of the reliability test are at the level of high reliability (excellent), with the Cronbach Alpha being 0.979 for digital culture items and 0.960 for employee performance items. The reliability analysis showed that the items of equipment were consistent.

1.3 Classic Assumption Test

1.3.1 Normality Test

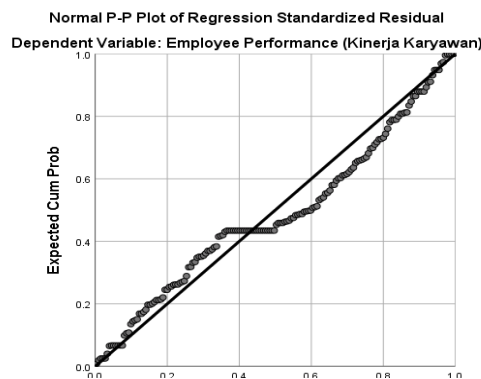


Figure 3. P-Plot Result

It is clear from the figure above that it creates a straight diagonal line, and the dots spread out in all directions surrounding the diagonal line. As a result, it can be said that the residuals have a normal distribution.

1.3.2 Heteroscedasticity Test

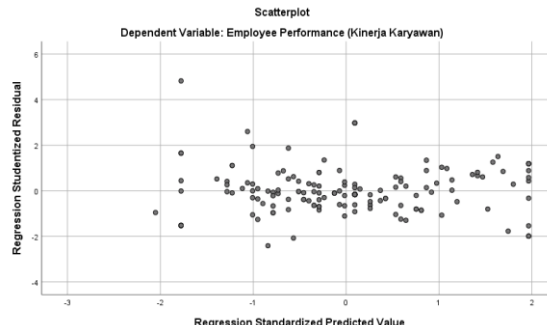


Figure 4. Scatter plot Result

There is no consistent pattern of systematic errors, hence the scatterplot graph in the figure above can be considered random because the dots are randomly distributed above and below zero on the Y axis. Therefore, it can be regarded that the variance is homoscedastic because there is no difference in the residual variance.

1.4 Simple Regression test

Table 3. Regression Model

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	36.949	3.868		9.552	.000
	Digital Culture (Budaya Digital)	.354	.029	.694	12.405	.000***
a. Dependent Variable: Employee Performance						
b. Standards errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$						

According to the results, the constant (a) is 36.949 and the regression coefficient (b) is 0.354. The simple linear regression equation, $Y = a + bX$, was then created using the constant value and regression coefficient. The regression equation in this instance would appear like this.

$$Y = 36.949 + 0.354X$$

It is also possible to draw conclusions from the table, such as those in the statements below.

- a. A constant value of 36.949 means that if digital culture as an independent variable (X) is zero, then employee performance as a dependent variable (Y) will have a value of 36.949.
- b. The regression coefficient of digital culture is 0.354, which is positive, meaning that if digital culture as an independent variable (X) increases by one unit, then it will increase employee performance as a dependent variable (Y), amounting to 0.354.

1.5 Hypothesis Test

1.5.1 Pearson Correlation Analysis

Table 4. Pearson Correlation Analysis

Correlations			
		Digital Culture	Employee Performance
Total Digital Culture (Budaya Digital)	Pearson Correlation	1	.601**
	Sig. (2-tailed)		.000
	N	168	168
Total Employee Performance (Kinerja Karyawan)	Pearson Correlation	.601**	1
	Sig. (2-tailed)	.000	
	N	168	168

** . Correlation is significant at the 0.05 level (2-tailed)

Based on the result shown in the table above, there is a positive relationship with a p value less than 0.05 ($p = 0.05$). As a result, with an r value of 0.601, the relationship between two variables is moderate. Digital culture positively impacts employee performance. Based on Table III.5, which is used for the Correlation Coefficient Interpretation, the relationship between digital culture and employee performance is moderate. To conclude, there is a positive relationship between digital culture and employee performance. It means that **H1 is accepted**.

1.5.2 Simultaneous Testing (F-Test)

Table 5. Simultaneous Testing (F-Test)

ANOVA ^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6915.712	1	6915.712	153.883	.000 ^b
	Residual	7460.282	166	44.941		
	Total	14375.994	167			
a. Predictors: (Constant), Digital Culture						
b. Dependent Variable: Employee Performance						

The results of the assessment carried out with the SPSS program, obtained a value of $F = 153.883$ with $sig. = 0.000$ smaller than α of 0.05. This means that there is a significant simultaneous influence of independent variable on employee performance. The significant influence means that **H1 is accepted**.

1.5.3 Partial Testing (t-Test)

Table 3 which is the coefficients table of regression model 1 is also used for the T-test to check whether digital culture affects employee performance. It can be seen from the table that the t count (12.405) is higher than the t table (2.6059), which means that the alternative hypothesis (**H1**) is accepted in which digital culture partially has a significant effect on employee performance. Moreover, based on the table above, the significance obtained was 0.000. By comparing this value to the probability value, which is 0.05, the result is that the sig. value is less than the probability value ($0.000 < 0.05$), which also means the digital culture has a significant impact on employee work performance.

1.5.4 Coefficient of Determination (R_2)

Table 6. Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.694 ^a	.481	.478	6.70384
a. Predictors: (Constant), Digital Culture				
b. Dependent Variable: Employee Performance				

Finally, the coefficient of determination is used to define the amount of impact that digital culture has on employee performance. As shown in the table above, the R-value is 0.694, while the R square is 0.481, or 48.1%. It means that the value of the coefficient of determination reaches 48.1%, which indicates that the independent variable (X) of digital culture influences the dependent variable (Y) of employee performance by 48.1%, while the remaining 51.9% of employee performance is influenced by other variables outside this study.

2. Business Solution

Overall, PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng have a high level of digital culture application, enabling the business to keep its achievements as a digital company up and speed up to more achievements to come. The results from conducting a questionnaire and interview indicate that digital culture in PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng is running and progressing well and in the right direction. However, several dimensions are of particular concern in this study because there are few employees ranging from those who aren't well informed and adapted to those who believe some of the dimensions of digital culture aren't being implemented optimally. Especially in terms of customer centricity, they have to be able to use digital solutions to increase the number of customers, for example, by giving more way to new-age digital media such as influencers, experiential marketing, and personalized customer journeys.

What needs to be improved is the ability of a select group of employees, particularly those in lower-level management, to adapt to digital technology and the era. PLN, especially PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng, must provide more opportunities for their employees' development, more chances to put the development program's learning outcomes into practice, so the application of digital culture will be optimal as a whole. Furthermore, the company must promote employee creativity in the workplace and broaden employee understanding of digital technologies for those who feel unfamiliar with them. It might offer resources like brainstorming sessions, digital learning, or focus groups, which are helpful to refine new ideas and give special knowledge to the employees involved. If the company puts more attention toward this situation, the value of each digital culture's dimension at least won't fall to the lowest level.

The company can continue to establish and maintain high employee performance under the current circumstances so that employees can keep improving their performance, seeing as the level of employee performance in PLN, especially at PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng is very high. The quality of work—which has the lowest score when compared to the other dimensions—has now become a concern, even though based on the survey result, it's still declared good.

Seeing the significant connection between digital culture and employee performance, the quality of work might be affected by the optimality of digital culture itself. Employees are expected to complete their responsibilities more promptly to increase the quality of their work be affected by the optimality of digital culture itself. Employees are expected to complete their responsibilities more promptly to increase the quality of their work. The company can solve this issue by giving staff goals and motivation to work towards and occasionally recognizing and rewarding those who perform exceptionally well, so other employees will take it as inspiration and motivation to meet their goals and those of the company as a whole, by improving their quality of work. Like what's been mentioned before, the implementation of digital competencies, both hard and soft, is expected to create a better digital culture so it can positively affect employee performance. It better start with creating a small hierarchy for them for their own self-direction in order to control employee work quality in each department due to the company core competencies as a 4.0 industry. There is a significant relationship between digital culture and employee performance; if the digital culture is implemented evenly, the employee performance will increase as well.

V. CONCLUSION

1. The level and mean score of digital culture in PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng are both at a high level, with an average score of 78.99% and a mean score of 3.95.
2. The level of employee performance in PT. PLN (Persero) UID Jakarta Raya and PT. PLN (Persero) UP3 Menteng is very high, and the mean score of employee performance is high, with an average score of 80.87% and a mean score of 4.04.
3. There is a positive and significant relationship between digital culture (X) as a dependent variable and employee performance (Y) as an independent variable, which means if the application of digital culture is good and optimal, the employee performance will be better as well. Therefore, the hypothesis testing result for this study is accepted or it could be stated that H1 is accepted.

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****Corresponding Author: Fenycia Utari Firstianti Medah¹***
¹(School of Business and Management, Institut Teknologi Bandung, Indonesia)