

Analysis of the Effect Adoption Digital Technology on Workplace Digitalisation Transformation at PT Indosat Ooredoo Hutchison

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Received: May 12, 2023

Accepted: June 10, 2023

Online Published: May 14, 2024

doi:10.5539/ijbm.v19n4p16

URL: <https://doi.org/10.5539/ijbm.v19n4p16>

Abstract

This study aims to determine the influence of Adoption Digital Technology on workplace digitalization with innovative culture as an intervening and the relationship between Adoption Digital Technology and innovative culture mediated by digital literacy in telecommunications companies. This study used quantitative methods by testing hypothesis relationships among constructs using analysis with smart pls-sem 4 applications. The research methodology used was based on a deductive approach using a questionnaire survey on 250 samples, with respondents being permanent employees of PT Indosat regional Indonesia Timur. The findings show that adoption of digital technology has a significant influence on workplace digitalization mediated by innovative culture. Digital literacy has an insignificant moderation effect between adoption of digital technology and innovative culture. The study provides new insights to industry practitioners that adoption of digital technology can improve workplace digitalization. Innovative culture is one of the supporting cultures in influencing to improve workplace digitalization.

Keywords: adoption digital technology, innovative culture, workplace digitalization, and digital literacy

1. Introduction

1.1 Introduce the Problem

Digital transformation is integrated in many aspects of life and work, this integration has changed the way organizations are run. To benefit from the digital transformation process, organizations are required to creatively build a digital culture and internalize it in the implementation of daily company activities. Companies that do not immediately adopt technology, will miss opportunities to reap the benefits of digital transformation for productivity, efficiency, and effectiveness of their operations (Attaran et al., 2019).

As the composition of the workforce undergoes changes, businesses and employers are facing challenges in accommodating the diverse needs of employees from different generations. The proliferation of smart mobile devices and the internet is still on the rise, and the rate of change is accelerating. The COVID-19 pandemic has intensified this trend with the sudden transition of office-based employees to remote and hybrid work arrangements. According to the results of a Jakpat survey entitled Post-Pandemic Workplace Preference, it is known that around 44% of respondents chose to work from the office or WFO after the pandemic. In addition, the survey noted that about 21% of respondents chose to work in combination or hybrid, 19% of respondents chose to work from anywhere or WFA, and 15% of respondents chose to work from home. This shows that after the pandemic a work environment will not be the same as before the pandemic, so it is necessary to form a new work system called Workplace Digitalisation (Jakpat, 2022). In the survey, which involved 7,000 respondents in 15 countries, it was found that employees in companies that actively implement digital tools experienced an increase in productivity of up to 73%. In addition, 70% of them reported that the use of technology in the work environment allows them to have a healthier life balance (Bowen, 2018).

According to Gartner, digital agility refers to an employee's willingness and aptitude to leverage both current and upcoming technologies to achieve business objectives, which has become increasingly crucial as digital technology becomes more pervasive in various job roles. To enhance digital agility, it is essential to implement a sound strategy for workplace digitalization that fosters an immersive and user-friendly work environment (Jackie Wiles, 2022). Digitalization pertains to the use of digital tools and systems in the realms of business, economy,

and society. Unforeseen circumstances can complicate the process of digitalization and introduce novel obstacles along the path towards digital transformation (Yalina, 2020). The primary hurdle in digitalization does not solely revolve around technology. Incorporating new technological tools into a work setting involves more than just hardware or software; it necessitates a workforce that is receptive to change, possesses adequate knowledge to operate the technology, and exhibits appropriate behavior after the technology is implemented (Nikou et al., 2022). The findings are in broad agreement among policymakers that existing workforce literacy is inadequate to meet future workplace literacy demands (Daswin, 2022).

Several studies using transformational leadership, innovative culture, and Workplace Digitalisation variables have significant relationships as conducted by Chan et al., 2021. A recent study demonstrated a notable correlation between employee engagement and the antecedents of workplace digitalization and a culture of innovation. Additionally, the study found that the relationship between workplace digitalization, employee engagement, and an innovative culture is moderated by digital literacy. The findings provide valuable insights to professionals regarding the critical role of digital literacy in enhancing employee engagement during workplace digitalization. Furthermore, the results contribute to the literature on employee engagement by highlighting the significance of improving digital literacy to foster employee acceptance of workplace digitalization and to create an environment that fosters innovation, thereby strengthening employee engagement. Therefore, organizations should prioritize enhancing employees' digital literacy while simultaneously digitizing the workplace and cultivating a culture that promotes innovation, to foster robust employee engagement (Jackie Wiles, 2022).

Other research was found by Nikou et al., 2022. A study discovered that information literacy and digital literacy directly influence the perceived ease of using technology, but not its perceived usability. The study suggests that both literacies have an indirect effect on employees' intention to use digital technology at work through their attitudes towards usage. This research represents one of the earliest investigations into the role of information literacy and digital literacy as novel antecedents of technology acceptance models in the workplace. (Hooi & Chan, 2022). A study found that the connection between transformational leadership and workplace digitalization is influenced by an innovative culture. Furthermore, awards and recognition play a moderating role in the relationship between transformational leadership and an innovative culture. These findings add to the existing interdisciplinary literature on how transformational leadership, reward recognition, and innovative culture intersect with employee perceptions and acceptance of workplace digitalization.

To create this more agile work environment, a series of changes will be implemented such as working from Home every two days of the week, flexible working hours, with start times up to the individual. Trials are underway but not yet optimal, when we will review the impact on our employees, line managers and business and decide on further implementation and permanence." (Kuwari, 2022). According to Irsyad, implementing work-life balance not only helps employees to maintain their mental health, but can also help them build careers more effectively. He believes that the more time we must develop ourselves, the greater the potential that can be taken. Therefore, since 2016, Irsyad has implemented a flexible way of working that allows employees to work from anywhere, including from home, known as agile ways of working. This policy was implemented long before the COVID-19 pandemic to help employees achieve a balance between their professional and personal lives (Nada Meita Nursiswati, 2022).

Indosat Ooredoo Hutchison begins the first step in a new way of working. This new way of working is carried out by means of 50% Hybrid Work, or working by combining WFO and WFH which aims to increase work effectiveness without reducing vigilance in maintaining the health of all employees. Hybrid Working starts from January 17, 2022, which is distributed via email to all employees in the form of a playbook. This digital way of working is supported by form tools and applications prepared by company management such as Microsoft 365, Google Cloud etc. This way of working is also done by Indosat employees because currently there are only 5 regional offices in major cities that are centers of support employees doing work offline almost 80% of Indosat employees work digitally (Nada Meita Nursiswati, 2022). In the workplace digitalization setting, even as the demand for decision-making and problem-solving skills continues to increase, certain individuals, especially older workers, remain hesitant to embrace information technology and digital work processes. This underscores the critical requirement for a workforce that is highly skilled, competent, and adaptable, in addition to being capable of effectively interacting with technology and information. In addition, with the rapidly changing digital technology landscape in the workplace and the demands in changing the way digital work by employees is expected not only on information, but also the need to be equipped with literacy, such as information technology literacy, technological literacy, media literacy, online literacy. This broad literacy array allows workers to interact with technology and understand what technology is and how to use it, this was conveyed by Irsyad Sahroni as Director & Chief Human Resources Officer in the DCHRO Visit Regional

Kalisumapa activity held in Balikpapan, Kalimantan province on November 24, 2022, in a Hybrid manner.

1.2 Explore Importance of the Problem

According to Stefan F. Dieffenbacher, 2022 is an approach that utilizes digital technology to strengthen business position and meet business goals, involves all departments, and functions in the organization, and requires continuous innovation and renewal (Stefan F. Dieffenbacher, 2022). Digital transformation is a complex and multifaceted concept that involves multiple stakeholders. It encompasses the process of altering the way in which businesses utilize technology, people, and processes to enhance their performance and adopt new business models (Dynatrace LLC, 2022).

Digital adoption is the journey that an individual undertakes to gain complete mastery over a new technology and effectively execute a digital process for a particular purpose. It is a process of change and learning that empowers individuals to comprehend the potential of digital resources, embrace and employ these resources to accomplish their objectives, and utilize each technology to stimulate innovation and optimize processes (Team Userlane, 2023). The corporate environment experiences several challenges and opportunities from technological disruption affecting businesses, management, and workplaces (Flyverbom et al., 2019).

1.3 Describe Relevant Scholarship

The digitization of the workplace is a technological infrastructure that consolidates an organization's applications, data, and endpoints into a single online platform. This platform allows employees to collaborate and work together in a virtual environment (Werner Geysler, 2022). According to Gartner's research, achieving high team innovation is just as crucial, if not more so, through asynchronous collaboration, particularly in a hybrid work setting where work schedules may not entirely overlap (Jackie Wiles, 2022). According to Alosani et al., 2020, The term "Innovation Culture" refers to the collective values, norms, and attitudes towards innovation, entrepreneurship, technology, business uncertainty, and other related activities that shape human behavior towards innovation. Another opinion defines Innovation Culture is a process about employee behavior or ideas on their work and can be a risk in improving their performance (Kawilarang et al., 2019).

Digital literacy skills include the ability to understand and use information from a variety of sources that can be accessed through computers. This involves not only technological aspects, but also the ability to learn, think critically, innovate, and be creative in terms of digital competence (Dwi Latifatul Fajri, 2021). Digital literacy enables individuals to cultivate critical thinking skills, problem-solving abilities, effective communication, and collaborative skills with others (Husen Mulachela, 2022).

1.4 State Hypotheses and Their Correspondence to Research Design

According to the book Business Research by Uma Sekaran published in 1992, the frame of mind refers to a conceptual model that explains the relationship between theory and various factors that are considered important in identifying a problem (Sugiyono, 2013). Here is an image of the framework of thought designed for this study:

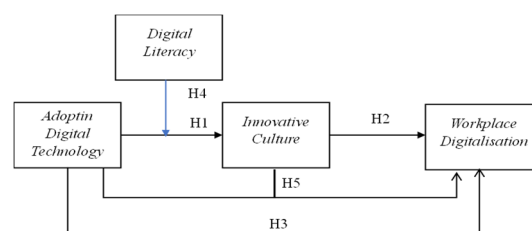


Figure 1. Framework of thought

Based on the framework mentioned above, this study has added the variable Adoption Digital Technology with the hypothesis that Adoption Digital Technology affects Workplace Digitalisation. There are no published studies that consider Adoption Digital Technology influencing Workplace Digitalisation and Innovative Culture as interventions moderated by digital literacy in the field of telecommunication. This study aims to fill the gap by investigating how culture innovation intervening the relationship between Adoption Digital Technology, innovative culture, and workplace digitalization. Therefore, digital literacy connects Adoption Digital Technology with a culture of innovation and Digitalization of the workplace, this is when employees see 1 digital iteration includes the knowledge and skills of users in using digital media such as communication devices and

internet networks in a way that is beneficial and supports mutual interaction. Analyzing the moderation relationship of digital literacy will help illustrate the boundary conditions that digital technology can leverage to build innovative cultures and digitize the workplace.

Hipotesis 1: Adoption Digital Technology has a significant influence on innovative culture.

Hipotesis 2: Innovative Culture has a significant influence on Workplace Digitalisation.

Hipotesis 3: Adoption Digital Technology has a significant influence on Workplace Digitalisation.

Hipotesis 4: Digital literacy has a moderating influence on Adoption Digital Technology and innovative culture.

Hipotesis 5: Adoption Digital Technology with Innovative culture as intervening has a significant influence on Workplace Digitalisation.

2. Method

This research applies quantitative methods as scientific methods that meet scientific standards, including empirical, objective, measurable, rational, and systematic concrete. Quantitative methods are often referred to as discovery methods because they can discover and develop various new sciences and technologies. In this method, research data is measured in the form of numbers and analyzed using statistics (Sugiyono, 2013). After that, the hypothesis will be tested through data collection from the field. In collecting these data, researchers use research instruments.

2.1 Identify Subsections

In this study, the population or sample taken must be representative. The research method used is deductive, where concepts or theories are used to formulate hypotheses and answer research questions. The sample used is taken randomly, so that the results of the research conclusions can be applied to the population where the sample is taken (Sugiyono, 2013). Population refers to a general area consisting of objects or subjects that have qualities and characteristics that have been determined by the researcher to be the focus of research, and from there can then be taken conclusions (Sugiyono, 2013).

2.2 Participant (Subject) Characteristics

The population used in this study was employees of PT Indosat Ooredoo Hutchison Regional Kalimantan, Sulawesi, Maluku, and Papua. The number of populations to be measured in this study is 250. The sample constitutes a small percentage of the population that shares the same characteristics as the population, so it is important to ensure that a randomly drawn sample can truly represent the entire population (Sugiyono, 2013). Research variables are characteristics, attributes, or values possessed by objects or individuals that have certain variations, and are determined by researchers to be investigated and then conclusions are drawn (Sugiyono, 2013). Operational variables are a process to decompose the variables in a research problem into the smallest parts, so that they can be classified in size and facilitate the collection of data needed in the assessment of research problems (Indrawati, 2015).

2.3 Sampling Procedures

Data collection is a very important stage in research because the main purpose is to obtain data. Data collection techniques can be done through several ways, such as observation (observation), interviews, questionnaires (questionnaires), documentation, and a combination of the four techniques (Sugiyono, 2013). The data collection technique in this study is to use a questionnaire (questionnaire) by using an online questionnaire through google form from March 23, 2023, to March 25, 2023.

2.3.1 Sample Size, Power, and Precision

To determine the sample in this study, researchers used saturated sampling or census techniques. Saturated sampling is a technique in which all members of a population are used as samples. This method is often used when the population size is relatively small, or the study wants to generalize with a very small error rate. A saturated sample is also referred to as a census, where all members of the population are taken as a sample (Sugiyono, 2013). Based on the sample definition above, the number of samples in this study is taken from the total population of 250 samples.

2.3.2 Measures and Covariates

There are four variables used in this study, namely the independent variable (independent variable) is the adoption of digital technology measured through 5 statements referring to the study (Nikou, De Reuver, et al., 2022), The dependent variable (dependent variable) is workplace digitalisation measured through 5 statements that refer to the study (Rangarajan et al., 2022), (Deci et al., 2001) and (Venkatesh et al., 2003) The intervening

variable (ESCORT) is Innovative Culture measured through 5 statements that refer to research (Selimović et al., 2021) dan (Al-Khatib et al., 2022) and The moderator variable (strengthens and weakens) the relationship between variables is digital literacy measured through 5 statements that refer to research (Nikou, De Reuver, et al., 2022)and (Selimović et al., 2021).

2.3.3 Research Design

After the data is collected, analysis is carried out quantitatively using descriptive or inferential statistical techniques, so that the hypotheses formulated can be drawn conclusions whether proven or not. Testing is done by checking the validity and reliability of the data. The validity test measures the extent to which the research instrument (in this case the questionnaire) is able to measure the variable to be measured (Abdullah, 2015). Reliability testing refers to the extent to which measurement results remain consistent if the measurement instrument is used repeatedly (Abdullah, 2015). The next step is to analyze the data to provide answers to the problem formulation and hypotheses that have been formulated before. Once the data is analyzed, the results will be interpreted and inferred (Sugiyono, 2013). The authors chose to apply descriptive, verifative, and SEM-PLS analysis to this study.

3. Results

The results diagram displays the results of the study which can be accompanied by tables, graphs, or diagrams. In the discussion section, the data is processed, and the results are interpreted logically, and linked to relevant reference sources (Hair et al., 2019a). After performing the SEM-PLS analysis, the following modeling and data are generated:

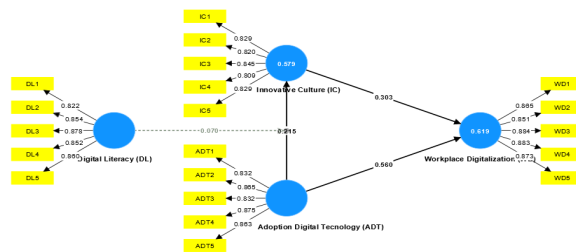


Figure 2. Diagram of SEM-PLS data processing results

Table 1. Outer Loading value in SEM-PLS data processing

	Adoption Digital Tecnology (ADT)	Digital Literacy (DL)	Innovative Culture (IC)	Workplace Digitalization (WD)
ADT1	0.832			
ADT2	0.865			
ADT3	0.832			
ADT4	0.875			
ADT5	0.863			
DL1		0.822		
DL2		0.854		
DL3		0.878		
DL4		0.852		
DL5		0.860		
IC1			0.829	
IC2			0.820	
IC3			0.845	
IC4			0.809	
IC5			0.829	
WD1				0.865
WD2				0.851
WD3				0.884
WD4				0.883
WD5				0.873

From data processing using SEM-PLS in Figure 4. 1 and 4. 2, as well as Table 4. 1, all indicators have sufficient validity and meet the criteria of loading coefficient value > 0.7 . In addition to the loading factor, construct validity can also be assessed by the AVE (Average Variance Extracted) value, which can indicate how well the latent variable can represent the original data. The higher the AVE value, the better the indicator value in measuring latent variables. The AVE cut-off used is 0.50 and the lowest value produced is 0.50 indicating that convergent validity is quite good, so the construct indicator has little possibility of being transferred to other variables (less than 0.50). A convergent indicator can become a construct if the block value is greater than 50% of the convergent validity value. The following are the AVE values obtained from data processing using the SEM-PLS application.

Table 2. AVE value in SEM-PLS data processing

	Average variance extracted (AVE)
Adoption Digital technology	0.729
Digital Literacy	0.728
Innovative Culture	0.683
Workplace Digitalization	0.759

From the results of SEM-PLS data processing shown in Table 2, it can be concluded that the AVE value of each variable is considered valid because it meets the criteria with a value exceeding 0.5. From the results shown in Table 7, Table 8, and Figure 2, it can be concluded that latent variables account for more than 50% of indicator variation and that all indicators and construct models have met the convergent validity test criteria.

To find out whether the indicators on the construct do not have a strong correlation with indicators on other constructs, a discriminant validity test is carried out. In this case, measurement models using reflective indicators will be assessed through testing with appropriate constructs. If the correlation value between the latent construct and its measuring element is higher than that of other latent constructs, then it can be concluded that the latent construct is better at predicting the size of the corresponding block. Below are the loading and side values resulting from data processing using SEM-PLS:

Table 3. Loading and cross loading

	Adoption Digital Tecnology (ADT)	Digital Literacy (DL)	Innovative Culture (IC)	Workplace Digitalization (WD)
ADT1	0.832	0.582	0.52	0.72
ADT2	0.865	0.637	0.555	0.634
ADT3	0.832	0.625	0.53	0.622
ADT4	0.875	0.638	0.516	0.652
ADT5	0.863	0.651	0.572	0.568
DL1	0.628	0.822	0.669	0.663
DL2	0.598	0.854	0.62	0.576
DL3	0.658	0.878	0.641	0.596
DL4	0.619	0.852	0.61	0.595
DL5	0.626	0.86	0.653	0.636
IC1	0.552	0.633	0.829	0.608
IC2	0.53	0.579	0.82	0.549
IC3	0.524	0.643	0.845	0.497
IC4	0.481	0.589	0.809	0.524
IC5	0.515	0.65	0.829	0.526
WD1	0.638	0.705	0.627	0.865
WD2	0.628	0.612	0.595	0.851
WD3	0.632	0.59	0.589	0.884
WD4	0.724	0.645	0.547	0.883
WD5	0.646	0.58	0.498	0.873

Indicators can be tested for validity by comparing their loading factor values with their cross-loading values. Table 3 shows that all construct loading values have higher values compared to cross-loading values. The Adoption Digital Technology construct has a higher loading value compared to other indicators. It can be

concluded that the constructs of Digital Literacy, Innovative Culture, and Workplace Digitalization have a stronger correlation with their own indicators than with other indicator-to-construct correlations. The same is seen in the constructs of Innovative Culture and Workplace Digitalization, where the correlation of both with indicators is higher than the correlation of indicators with other constructs. Therefore, the conclusion is that each construct has a better ability to predict the same indicator within a block than indicators in a different block.

One other way to determine discriminant validity is to compare the square root value of the Average Variance Extracted (AVE) for each construct with the correlation value between that construct and other constructs (correlation between latent variables). When the AVE root value of each construct is greater than the correlation value between the construct and the other constructs, it can be said that the model has sufficient discriminant validity. This information can be found in Table 4.

Table 4. Nilai discriminant validity

	Adoption Digital Tecnology (ADT)	Digital (DL)	Digital Literacy (DL)	Innovative Culture (IC)	Workplace Digitalization (WD)
Adoption Digital Tecnology (ADT)	0.854				
Digital Literacy (DL)	0.734	0.853			
Innovative Culture (IC)	0.631	0.749	0.826		
Workplace Digitalization (WD)	0.751	0.72	0.656	0.871	

From Table 3, it can be concluded that the square root of the AVE of each construct is greater than the correlation value between the construct and other constructs. This shows that the model has sufficient discriminant values. Based on Table 3 and Table 4, it can be concluded that all constructs in the model have met the criteria for discriminant validity test.

Next in evaluating external models, it is important to perform a composite reliability test. This method is recommended rather than using Cronbach's alpha value to test reliability on SEM models. Two metrics that can be used to measure the composite reliability of constructs are internal consistency and Cronbach's alpha value. Cronbach's alpha is usually the lower estimation limit for measuring reliability, while combined reliability is not considered reliability, whereas composite reliability is a closer estimate when more precise parameter estimates are assumed. The interpretation of synthetic reliability is Cronbach's alpha, with a cutoff of 0.7 or more acceptable. Below are the results of Cronbach's alpha and composite reliability tests for SEM-PLS analysis (Sarwono Jonathan et al., 2020).

Table 5. Value composite reliability and Cronbach's alpha

	Composite reliability	Cronbach's alpha
Adoption Digital Tecnology (ADT)	0.907	0.907
Digital Literacy (DL)	0.907	0.907
Innovative Culture (IC)	0.885	0.884
Workplace Digitalization (WD)	0.922	0.921

From Table 5 the research model is considered reliable because the value of composite reliability and Cronbach's alpha of all variables is greater than 0.7. Thus, it can be concluded that the four variables have reliable reliability, because they meet the criteria of the Composite Reliability test.

Table 6. HTMT value

	Adoption Digital Tecnology (ADT)	Digital Literacy (DL)	Innovative Culture (IC)	Workplace Digitalization (WD)
Digital Literacy (DL)	0.809			
Innovative Culture (IC)	0.704	0.835		
Workplace Digitalization (WD)	0.818	0.785	0.725	
Digital Literacy (DL) x Adoption Digital Tecnology (ADT)	0.501	0.261	0.202	0.353

From table 6 the value is less than 0.90, the evaluation of HTMT's discriminant validity is met.

The next stage is to evaluate R^2 , which has the same interpretation as R^2 in linear regression analysis, where the proportion of variation in endogenous variables can be explained by exogenous variables. (Sarwono Jonathan et al., 2020) explains: "The criteria for limiting the value of R^2 fall into four categories, namely 0.7 as strong; 0.67 as significant; 0.33 as medium and 0.19 as weak." Changes in the R^2 value indicate whether the measurement is exogenously latent. Variables have a significant effect with latent variables. The R^2 value obtained from the results of SEM-PLS data processing is as follows:

Table 7. Nilai R Square

	R-square
Innovative Culture (IC)	0.579
Workplace Digitalization (WD)	0.619

From Table 7, 57.9% of the Innovative culture variable can be explained by the variables Adpotion Digital Technology, Digital Literacy and Workplace Digitalization, while the remaining 42.1% is explained by other variables that are not included in the research model. The table also shows that the construct of Workplace Digitalization can be explained by 61.9% by the variables Innovative Culture and Adpotion Digital Technology, while the remaining 38.1% is explained by other variables that are not included in the research model.

Table 8. MV prediction summary

	Q ² predict	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
IC1	0.407	0.413	0.293	0.409	0.280
IC2	0.343	0.437	0.321	0.452	0.345
IC3	0.403	0.409	0.291	0.421	0.304
IC4	0.348	0.448	0.324	0.467	0.343
IC5	0.406	0.414	0.293	0.433	0.298
WD1	0.466	0.378	0.271	0.339	0.216
WD2	0.425	0.383	0.274	0.392	0.272
WD3	0.421	0.383	0.268	0.366	0.244
WD4	0.541	0.335	0.241	0.343	0.219
WD5	0.434	0.368	0.246	0.362	0.229

Table 9. LV prediction summary

	Q ² predict	RMSE	MAE
Innovative Culture	0.559	0.669	0.472
Workplace Digitalization	0.604	0.634	0.453

PLS is sem analysis with prediction purposes. Therefore, it is necessary to develop a measure of model validation form to show how good the prediction power of the proposed model is. Pls predict works as a form of validation of PLS prediction power. to show that PLS results have a good measure of predictive power, it is necessary to compare with the basic model, namely the LM linear regression model. The pls model is said to have predictive power if the RMSE or MAE size of the pls model is lower than the liner regression model (Hair et al., 2019).

1. If all measurement items of the PLS model have RMSE and MAE values lower than the liner regression model, then the PLS mdoel has high predictive power.
2. If most of it, then has the predictive power of the medium

Based on the results of measuring 10 p on RMSE and mae values, 6 PLS model measurement items with RMSE and MAE values lower than the LM model (liner regression). This shows that the proposed mdoel pls has medium predictive power (Hair et al., 2019).

Testing hypotheses between constructs, namely exogenous constructs against endogenous constructs and endogenous constructs against endogenous constructs, was carried out using the bootstrap resampling method

developed by Geisser. The test statistics used are t-statistics or t-tests, the use of resampling allows data to be freely distributed, does not require assumptions of normality, and does not require large samples(Ghozali Imam, 2014) (Sarwono Jonathan et al., 2020).

Hypothesis testing using full model SEM (Structural Equation Modeling) analysis with smart PLS 4. In the full SEM model with PLS, in addition to predicting the model, it also explains whether there is a relationship between latent variables or not. The relationship of path analysis of all latent PLS variables in this study is as follows:

1. The outer model defines the relationship between indicators and latent variables.
2. The inner model defines the relationship between a latent variable.
3. Weight relation in which the case value of the latent variable can be estimated.

The decision to accept the hypothesis in this study was taken provided that the value of the one-way test t-table obtained in this study was 1.96 with a significance level of 0.05. In addition, the value of the t-table is used as the threshold for accepting or rejecting the proposed hypothesis:

1. The outer weight value of each indicator and its significance value. The recommended weight value is higher, and the t-statistic is higher than the t-table value of 1.645 for $\alpha = 0.05$ in the one tailed test.
2. At the inner weight value of the relationship between a latent variable. The weight value of the relationship should show a Positive direction with a statistical t- value higher than the t-table value of 1.96 for $\alpha = 0.05$ for the one tailed test.
3. The research hypothesis is accepted when the weight value of the relationship between latent variables shows a direction with a higher t-statistic value of t-table value of 1.96 for $\alpha = 0.05$ hypothesis of the study is rejected if the weight value of the relationship between variables shows a lower t-statistic value of t-table value for $\alpha = 0.05$.

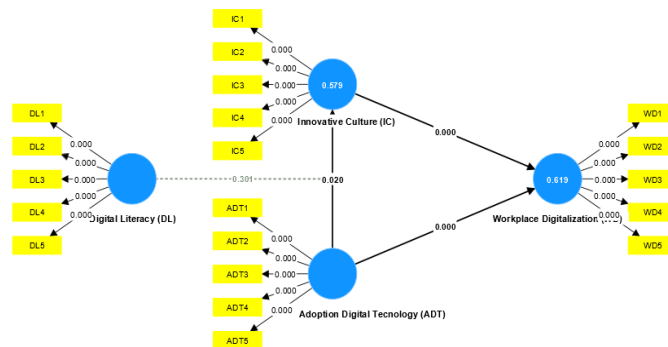


Figure 3. Results of bootstrapping process

Table 10. Results of direct influence hypothesis testing

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ((O/STDEV)	P values	Conclusion
Adoption Digital Tecnology -> Innovative Culture	0.215	0.222	0.093	2.319	0.020	There are significant positive effects, so the hypothesis can be accepted
Innovative Culture -> Workplace Digitalization	0.303	0.302	0.072	4.213	0,000	There are significant positive effects, so the hypothesis can be accepted
Adoption Digital Tecnology -> Workplace Digitalization	0.56	0.562	0.07	8.029	0,000	There are significant positive effects, so the hypothesis can be accepted

Table 11. Results of testing the indirect influence hypothesis

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ((O/STDEV))	P values	Kesimpulan
Digital Literacy x Adoption Digital Technology -> Innovative Culture	0.07	0.074	0.068	1.035	0.301	There are insignificant positive effects, so the hypothesis can be rejected
Adoption Digital Technology -> Innovative Culture -> Workplace Digitalization	0.065	0.066	0.031	2.122	0.034	There are significant positive effects, so the hypothesis can be accepted

Table 12. Hypothesis test results status/type of mediation

Hubungan	Nilai P Value	Kesimpulan	Status/jenis mediasi
Hubungan langsung (x-y) Adoption Digital Technology -> Workplace Digitalization	0,000	Significant	Mediasi Parsial (partial mediation)
Hubungan tidak langsung (x-m-y) Adoption Digital Technology -> Innovative Culture -> Workplace Digitalization	0,034	Significant	

Table 12 results of mediation hypothesis testing from the figure above shows the relationship Direct relationship (x-y) Adoption Digital Technology -> Workplace Digitalization has a p-value of 0.000 which means Positive and significant while the indirect relationship (x-m-y) Adoption Digital Technology -> Innovative Culture -> Workplace Digitalization where there is mediation or intervening variables in it have a p-value of 0.034 which means Positive and significant. Therefore, the two relationships above, both direct and indirect relationships, it can be concluded that Positive and significant, which means that with the Innovative Culture variable as an intervening, the relationship between Adoption Digital Technology and Workplace Digitalization is strengthened, the type of variable produced is Partial Mediation.

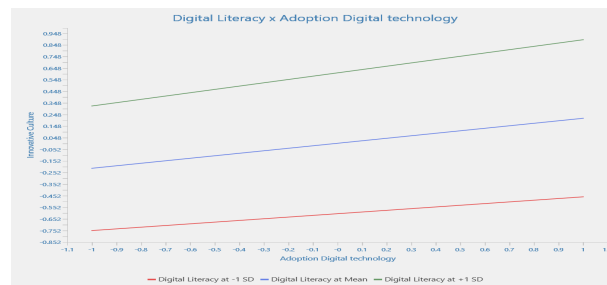


Figure 4. Simple slope analysis

Based on the results of the above plot sample it is known:

1. The green line is the influence of Adoption Digital Technology on innovative culture moderated by high digital literacy.
2. The red line is the influence of Adoption Digital Technology on innovative cultures with low digital literacy.
3. The gradient / slope of the two lines is relatively different, so the influence of Adoption Digital Technology on innovative culture with high and low digital literacy is different. Digital literacy does not significantly moderate the influence of Adoption Digital Technology on innovative culture.
4. Employees with high and low digital literacy have an insignificant moderation effect on Adoption Digital Technology and innovative culture.

To obtain a more scientific argument against the results of hypothesis testing, a discussion of research results is carried out as follows:

1. Hypothesis 1 (Adoption Digital Technology Influences Innovative Culture)

Based on Table 4.16, the parameter coefficient between Adoption Digital Technology and Innovative Culture (original sample) is 0.215, indicating a POSITIVE influence between the two. That is, the higher the Adoption of Digital Technology, the better the Innovative Culture. In addition, the resulting T-statistic value is 2.319, which indicates that the result is significant because the T-statistic value is greater than the t-table value ($2.319 > 1.96$), so the HYPOTHESIS is ACCEPTED. This helps test scientific arguments in the results of hypothesis testing.

This helps test scientific arguments in the results of hypothesis testing. Indosat Ooredoo management focuses on adding or updating technology facilities used by employees, both hardware and software and systems. Today's organizations prioritize prioritizing innovation and often employees are involved to participate in innovation activities on the job. Sufficient support from leaders to participate in innovation activities keeps colleagues challenged to make innovative ideas and the organization always considers innovative ideas to make changes based on those ideas.

2. Hypothesis 2 (Innovative Culture Affects Workplace Digitalization)

Based on Table 4.16, the parameter coefficient that measures the influence of the Innovative Culture variable on Workplace Digitalization (original sample) has a value of 0.303. This value shows a POSITIVE influence between the two variables, which can be interpreted that the higher the Innovative Culture, the better the Workplace Digitalization. Furthermore, the resulting T-statistic value is 4.213 which shows the result is said to be SIGNIFICANT because the statistical t value is greater than the t-table ($4.213 > 1.96$), or it can be said to be Hypothesis Accepted.

Based on the results of the analysis in Table 4.16, there is a positive influence between the variables of Innovative Culture and Workplace Digitalization at PT Indosat. It can be interpreted that the higher the level of Innovative Culture in the company, the better the level of Workplace Digitalization. In the context of PT Indosat, the improvement of Innovative Culture can be pursued through providing training and development of employees in the field of digital technology, as well as creating a work culture that encourages innovation and creativity in facing technological changes. Furthermore, efforts to improve Workplace Digitalization can be done by strengthening information and communication technology infrastructure in the company and encouraging the use of digital technology effectively and efficiently in various aspects of business.

In the context of PT Indosat, these results can be interpreted that the stronger the culture of innovation in the organization, the higher the level of digitalization in the workplace. This can be an indication that PT Indosat has implemented a strong culture of innovation and is able to encourage digitalization in the workplace. As a telecommunications company engaged in an industry that is always growing rapidly, digitalization is one of the important factors in improving the efficiency and effectiveness of company operations. Therefore, improving the culture of innovation and digitalization in the workplace is crucial for PT Indosat in winning the competition in an increasingly fierce industry.

3. Hypothesis 3 (Adoption Digital Technology affects Workplace Digitalization)

From Table 4.16, it can be concluded that the parameter coefficient of influence of the Adoption Digital Technology variable on Workplace Digitalization (original sample) is 0.56, indicating that there is a POSITIVE influence between the two variables. That is, the higher the Adoption of Digital Technology, the better the Workplace Digitalization. Furthermore, the resulting T-statistic value is 8.029, which indicates the result is SIGNIFICANT, since the statistical t-value is greater than the t-table ($8.029 > 1.96$), or it can be concluded that the hypothesis is accepted.

This shows that the higher the adoption rate of digital technology in PT Indosat, the better the level of workplace digitalization in the company. This is certainly a positive thing for PT Indosat, because good workplace digitalization can provide many benefits for the company, such as increased operational efficiency, reduced costs, and increased productivity. In the conditions mentioned above in accordance with what has been done by Indosat management where currently the management focuses on adding or updating technology facilities used by employees both hardware and software and systems such as laptop, tab, in collaboration with Google Cloud, Microsoft and so on.

4. Hypothesis 4 Digital Literacy moderates Adoption Digital Technology that affects Innovative Culture

Based on Table 4.16, the coefficient of the parameter of the influence of the Digital Literacy variable moderating Adoption Digital Technology on Innovative Culture (original sample) is 0.07 which shows a POSITIVE influence between the two variables but is not statistically significant. That is, the higher Digital Literacy strengthens Adoption Digital Technology, the better the Innovative Culture will be, but not statistically significant. From the resulting T-statistic value of 1.035, it can be concluded that the result is NOT

SIGNIFICANT because the statistical t-value is smaller than the t-table ($1.035 < 1.96$) and P-value ($0.301 > 0.05$). Therefore, it can be said that the hypothesis is rejected.

In the context of PT Indosat, the results showed that the influence of Digital Literacy variables moderating the influence of Adoption Digital Technology on Innovative Culture was not statistically significant. Nevertheless, companies still need to pay attention to the importance of increasing the level of Digital Literacy of employees to strengthen the influence of Adoption Digital Technology on Innovative Culture and Workplace Digitalization. This can help companies to improve their operational efficiency and effectiveness, as well as gain a competitive advantage in the digital era. Therefore, companies can make various efforts to improve employees' digital literacy, such as training and developing human resources, or adopting digital technology that is easier for employees to use and understand.

5. Hypothesis 5 (Adoption Digital Technology with Innovative Culture as an intervening influence on Workplace Digitalization)

From Table 4.17, a parameter coefficient of 0.065 is obtained which indicates a POSITIVE influence between the variables of Adoption Digital Technology and Innovative Culture as an intervention to Workplace Digitalization in the original sample. That is, the higher the level of Adoption Digital Technology with Innovative Culture as intervening, the better the implementation of Workplace Digitalization. The results of the analysis with a T-statistic value of 2.122 showed that the result was SIGNIFICANT because it exceeded the t-table value ($2.122 > 1.96$) and was hypothesis accepted.

Based on the results of the analysis, it can be concluded that in PT Indosat, the application of digital technology and innovative culture has a positive effect on increasing the level of digitalization in the workplace. In addition, digital literacy can also strengthen the relationship between adoption of digital technology and innovative culture with workplace digitalization. Therefore, companies can consider improving employee digital literacy, encouraging an innovative culture, and adopting digital technology to increase effectiveness and efficiency in work activities.

A. Mediation hypothesis testing

Testing the mediation hypothesis from the figure above shows the relationship Direct relationship (x-y) Adoption Digital Technology \rightarrow Workplace Digitalization has a p-value of 0.000 which means Positive and significant while the indirect relationship (x-m-y) Adoption Digital Technology \rightarrow Innovative Culture \rightarrow Workplace Digitalization where there is mediation or intervening variables in it have a p-value of 0.034 which means Positive and significant. Therefore, the two relationships above, both direct and indirect relationships, it can be concluded that Positive and significant, which means that with the Innovative Culture variable as an intervening, the relationship between Adoption Digital Technology and Workplace Digitalization is strengthened, the type of variable produced is Partial Mediation.

Based on the results of the mediation hypothesis testing, it can be concluded that there is a positive and significant relationship between Adoption Digital Technology and Workplace Digitalization at PT Indosat, either directly or indirectly through the intervening variable of Innovative Culture. The existence of these intervening variables strengthens the relationship between Adoption Digital Technology and Workplace Digitalization, so it can be said that Innovative Culture acts as a mediator in the relationship. The type of mediation that occurs is partial mediation, which means that Innovative Culture only partially mediates the relationship between Adoption Digital Technology and Workplace Digitalization. This shows that there are other factors that also influence the relationship outside of the Innovative Culture variable.

In the context of PT Indosat, these results can be used as a reference in efforts to improve the application of digital technology in the work environment. By considering the factors that influence the relationship, PT Indosat can design a more effective strategy to optimize the use of digital technology and increase efficiency and productivity in the workplace.

B. Moderation hypothesis testing

The results of testing the moderation hypothesis have found that Digital Literacy does not significantly moderate the influence of Digital Technology Adoption on Innovative Culture. PT Indosat Ooredoo as a large telecommunications company, of course, must adopt digital technology to remain competitive in an increasingly competitive market. However, with the existence of a good innovative company culture, Adoption of digital technology will have a significant impact on increasing Workplace digitalization. In this case, PT Indosat needs to pay attention to and improve the innovative culture of employees, so that employees can adopt digital technology well and utilize it to create Workplace digitalization in the company. PT Indosat has programs that aim to improve

the culture of innovation and digitalization in the workplace, such as ID Camp program, Training for trainer, Indosat Academy, Online certification, Enterparice, Technology, Commerce, IOH competence, Live event and leadership, which invites employees to participate in creating new and innovative solutions in business, as well as Digital Learning programs that provide training and development to employees in terms of digitalization and technology, all of which are available in the My Learning application that can be accessed by all employees. PT Indosat also provides other platforms such as linkedin learning that can be given to employees to increase knowledge.

4. Discussion

Based on the results of the analysis and discussion that has been carried out, the following conclusions are obtained:

1. Pada setiap variabel memiliki 5 indikator pernyataan dengan nilai skor total yang di dapatkan pada Adoption Digital Technology yaitu 4,539 dengan nilai rata-rata 3,63, variabel digital literacy di dapatkan nilai skor total 4,376 dengan nilai rata-rata 3,50, variabel Innovative Culture di dapatkan nilai skor total 4,440 dengan nilai rata-rata 3,55 dan variabel Workplace Digitalisation di dapatkan nilai skor total 4,532 dengan nilai rata-rata 3,63.
2. Adoption Digital Technology memiliki pengaruh positif dan significant terhadap Workplace Digitalisation pada PT Indosat. Hal ini menunjukkan bahwa semakin baik penerapan Adoption Digital Technology maka semakin baik pula Workplace Digitalisation yang telah dilakukan PT Indosat.
3. Adoption Digital Tecnology memiliki pengaruh positif dan significant terhadap Workplace Digitalization yang di intervening oleh Innovative Culture. Artinya, semakin tinggi tingkat Adoption Digital Tecnology dengan Innovative Culture sebagai intervening, maka semakin baik penerapan Workplace Digitalization.
4. Digital literacy memiliki pengaruh moderasi yang tidak signifikan antara Adoption Digital Tecnology dan Innovative Culture.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Canadian Center of Science and Education.

The journal and publisher adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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