

The Effect of System Digitalization and Work Discipline on Employee Performance in the Business Operation Support Department of PT. Huawei

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Abstract

This study examines how the digitalization of systems and work discipline affects employee performance in the Business Operation Support Department of PT Huawei Indonesia. Using a quantitative survey method of 100 respondents, the analysis was carried out through linear regression with SPSS version 29. The findings showed that the digitization of the system had a significant effect ($t=16.461>1.984$; $p=0.001$) with the equation $Y=8.186+1.293X_1$. Work discipline had a stronger impact ($t=19.151>1.984$; $\beta=0.578$; equation $Y=2.353+1.703X_2$). Simultaneously, both variables contributed significantly ($F=228.574>3.090$; $R^2=82.5\%$; equation $Y=-1.389+0.548X_1+1.108X_2$), with work discipline as the dominant factor. The research emphasizes the importance of a balance between the implementation of digital technology and strengthening discipline for performance optimization.

Keywords: System Digitization; Work discipline; Employee Performance

INTRODUCTION

The era of digital transformation brings fundamental changes in the way organizations run their operations. The integration of digital technology is not just the adoption of new devices, but a paradigm shift that demands adjustments to work behavior and culture (Vial, 2019; Westerman et al., 2014). In Indonesia, this momentum is getting stronger in line with national policies that encourage the acceleration of digitalization in various sectors, including the telecommunications and information technology industries.

The digitalization phenomenon has double implications for organizational performance. On the one hand, digital technology offers increased efficiency, transparency, and speed in information processing (Bharadwaj et al., 2013; Laudon & Laudon, 2020). However, on the other hand, the success of technology implementation is highly dependent on the readiness and behavior of human resources, especially the aspect of discipline in running the established system (Bondarouk et al., 2021; Kusjono & Rahim, 2021).

PT Huawei Indonesia, as a major player in the global technology industry, faces unique challenges in integrating system digitalization with human resource management. The Business Operation Support (BOS) Department, which is the backbone of the company's operations, shows interesting dynamics related to the relationship between the application of digital technology and employee work discipline.

The Key Performance Indicator (KPI) data for the 2019-2024 period reveals an interesting pattern to be studied in more depth:

Table 1. Performance Achievement Data per Year of Employees

Year	Number of Employees	Attendance Rate (%)	Task Completion Rate (%)	Error Rate (%)	Productivity Score	Customer Satisfaction (%)	Overall KPI Score
2019	89	95.8	91	4.2	80.5	85.1	83.2
2020	93	92.1	85.4	6.5	72	78	76
2021	95	93	86.7	6	73.5	79.2	77
2022	100	96.2	90.5	5.8	81.2	85.5	83.4
2023	100	95	91.8	5.4	82.5	86.8	84.7
2024	100	94.8	93	5.1	85	88.4	85.3

Source: Primary Data of Dept. BOS PT. Huawei (2025)

The table above shows a significant anomaly in 2020, when the COVID-19 pandemic caused a drastic decline in all performance indicators. The overall KPI slumped from 83.2 (2019) to 76.0 (2020), marking the largest decline in the observation period. The attendance rate dropped to a low of 92.1%, while the error rate jumped to 6.5%. This condition reflects the challenge of maintaining work discipline in the midst of drastic changes in work patterns.

But more interestingly, the 2022-2024 period showed a consistent gradual recovery. The implementation of a more mature digitalization system contributed to an increase in productivity from 81.2 (2022) to 85.0 (2024), and customer satisfaction increased from 85.5% to 88.4%. This pattern indicates a synergy between the adoption of digital technology and the improvement of post-pandemic work discipline.

Table 2. Recapitulation of Attendance and Absence (2019-2024)

Year	Workday	Employee	Late	References	Alfa	Total Cases	Attendance (%)
2019	244	89	85	120	65	270	95.80
2020	244	93	130	180	95	405	92.10
2021	244	95	115	170	85	370	93.00
2022	244	100	90	135	65	290	96.20
2023	244	100	95	150	70	315	95.00
2024	248	100	100	160	75	335	94.80

Source: Primary Data of Dept. BOS PT. Huawei (2025)

The attendance data reinforces previous findings. 2020 recorded a spike in absenteeism cases reaching 405 cases (130 late, 180 permits, 95 alpha), the highest in the last six years. Despite improvements in 2022 (290 cases), 2024 shows an upward trend back to 335 cases, indicating the ongoing challenge of maintaining discipline even though the digital system has been fully implemented.

To understand the perception of employees directly, a pre-survey was conducted of 30 respondents which resulted in the following findings:

Table 3. Pre-Survey Employee Performance

Indicator	Statement	Setuju	Disagree
Target achievement	Able to achieve set targets	53%	47%
Productivity	Expertise increases productivity	73%	27%
Quality of work	Professional and thorough	37%	63%
Discipline	Comply with your organization's policies	33%	67%
Digital utilization	Leveraging digital technology	77%	23%
Task effectiveness	Effective and efficient working methods	60%	40%
Collaboration	Good communication and cooperation	70%	30%

Source: Pre-Survey Data (2025)

The results of the pre-survey reveal an interesting paradox: 77% of employees feel able to take advantage of digital technology, but only 33% admit to consistently adhering to organizational policies. Even more surprising, 63% of respondents admitted that they have not been able to work professionally and thoroughly according to the set standards. This gap indicates that technical ability to use technology does not automatically result in disciplined and quality work behavior.

Table 4. Pre-Survey of Work Discipline

Indicator	Statement	Agree	Disagree
Timeliness	Attend and go home on schedule	50%	50%
Time effectiveness	Leverage optimal working hours	60%	40%
Work targets	Target according to ability	57%	43%
Rule compliance	Obey the rules	47%	53%

Source: Pre-Survey Data (2025)

Work discipline data show a nearly balanced distribution between compliant and non-compliant (50:50 for punctuality, 47:53 for rule compliance). This condition reflects behavioral inconsistencies that are a serious challenge for management.

Table 5. Pre-Survey of System Digitization

Indicator	Statement	Agree	Disagree
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Facilities	Technology is easy to understand	90%	10%
Benefit	Increase work effectiveness	80%	20%
Enthusiasm	Enthusiastic about using the system	83%	17%
Persistence	Keep using despite obstacles	83%	17%
Timeliness	Arriving on time	77%	23%

Source: Pre-Survey Data (2025)

Positive perceptions of digitalization are very high (90% consider it easy, 80% consider it useful), but it is not directly proportional to improving discipline. Only 77% consistently arrive on time, indicating that the adoption of technology has not completely transformed work culture.

A literature review reveals some significant research gaps. *First*, most previous studies have addressed digitalization and work discipline separately. The research of Ilyas and Bahagia (2021) examines the digitalization of public services during the pandemic, while Anggraini et al. (2024) focus on the environment and work discipline in government agencies. There have not been many studies that simultaneously integrate the two variables in the context of multinational technology companies. *Second*, research on digitalization tends to focus on technical and infrastructure aspects (Elmi et al., 2024; Zhang & Chen, 2020), but lacks exploration of the behavioral and cultural dimensions of the organization that are key factors for successful implementation. As argued by Bondarouk et al. (2021), the success of e-HRM is not only determined by the sophistication of the system, but also the readiness and behavior of users. *Third*, the context of the telecommunications and information technology industry in Indonesia is still underresearched. Most of the studies were conducted in the public sector (Suparman & Sugiyanto, 2022) or banking (Cornelia et al., 2025; Purwatiningsih, 2022), while global technology companies such as Huawei have unique characteristics in terms of operational complexity and performance standards. *Fourth*, previous research has shown mixed results regarding which variables are more dominant in influencing performance. Shidqi et al. (2023) found digitalization as a major factor in BNI, while Hertya et al. (2025) identified digital culture with discipline as moderation. These inconsistencies require further investigation, particularly in different operational contexts. *Fifth*, the impact of the COVID-19 pandemic on digitalization-discipline-performance relations has not been fully documented. PT Huawei's data shows a unique pattern where digitalization is accelerated precisely when work discipline decreases drastically (2020-2021). This phenomenon opens up the question: can technology compensate for the weakness of discipline, or does it require stronger discipline to be effective?

This research is important for several reasons. First, from a practical perspective, the findings can provide guidance for PT Huawei's management in designing more effective performance improvement strategies. By understanding the relative contribution of digitization of systems and work disciplines, companies can allocate resources more on target. Second, theoretically, this research contributes to enriching the literature on Digital Transformation and Human Resource Management, especially in the context of emerging markets. The developed model could serve as a reference for similar studies at other multinational technology companies operating in Indonesia. Third, the results of the research can provide insight into how companies can balance technology investment with the development of work culture. Pre-survey data showing high technology adoption but low discipline indicate the need for a holistic approach that does not only focus on technical aspects. Fourth, in the context of post-pandemic recovery, this research is relevant to understand how organizations can build resilience through a combination of technology and strengthening work behavior. The gradual recovery pattern seen in the 2022-2024 data requires a more in-depth explanation of the contributing factors. Fifth, this study answers the industry's need for empirical evidence regarding the Return on Investment (ROI) of digitalization. By demonstrating quantitatively how digitalization contributes to performance, organizations can make more measurable technology investment decisions.

The novelty of this research lies in several aspects. First, integrating the variables of digitization of the system and work discipline in one simultaneous model, something that is rarely done in the context of the Indonesian technology industry. Second, using 6-year longitudinal data (2019-2024) covering the pandemic period, it allows for a more comprehensive analysis of trends and patterns of change. Third, focus on the Business Operation Support department which has a crucial but often overlooked role in organizational research. BOS as an operational support unit has unique characteristics where efficiency and accuracy are critical. Fourth, combining secondary data (KPIs, attendance) with primary data (perception surveys), provides triangulation that strengthens the validity of the findings. Fifth, contribute

to the Technology Acceptance Model (TAM) theory by adding the dimension of disciplinary behavior as a mediator between technology adoption and performance. So far, TAM has focused more on usage intent and user satisfaction, not many have explored how actual work behavior affects performance output.

Several recent studies reinforce the relevance of this research. Marco Orel (2023) in the Equality Diversity and Inclusion Journal shows how digital technology and coworking spaces affect performance through work-life balance mediation. These findings are parallel to the context of PT Huawei where the flexibility offered by digital systems must be balanced with independent discipline.

Kusjono and Rahim (2021) in their research at Pamulang University found that digital transformation in educational organizations requires strong work culture support. They argue that technology will only be effective if it is supported by adaptive mindsets and behaviors. Kusjono et al. (2022) further identified that digital leadership and organizational discipline are key combinations in improving performance in the Industry 4.0 era.

Hertya Andriani et al. (2025) in a recent study found that digital culture affects employee performance with work discipline as a moderation variable. These results confirm that without strong discipline, digital culture will not result in significant performance improvements. Their findings are in line with PT Huawei's pre-survey data which shows high technology adoption but discipline is still low.

Susanti et al. (2023) revealed that in the context of Indonesian companies, the digitalization of systems and work discipline have complex interactions. They found that the effect of digitalization was only optimal when the level of work discipline was in the high category, indicating a synergy effect between the two variables.

Aisyah et al. (2025) in the latest proceedings discuss digital transformation in financial management and its impact on decision-making. They emphasized that sophisticated digital systems require operators who are not only technically skilled, but also have high integrity and discipline to avoid misuse of access to information.

Banjarnahor et al.'s (2022) research on digital transformation and organizational behavior concluded that technological changes must be accompanied by organizational culture transformation. They identified work discipline as one of the cultural pillars that must be strengthened in the digitalization process.

Based on the above phenomena, empirical data, research gaps, and the support of the latest literature, this study aims to: (1) analyze the influence of system digitalization on the performance of employees of PT Huawei's BOS Department; (2) analyze the influence of work discipline on employee performance; and (3) analyze the simultaneous influence of system digitization and work discipline on employee performance. Thus, this research is expected to make a theoretical and practical contribution in understanding the dynamics of digitalization, work discipline, and performance in the era of digital transformation.

METHOD

This study uses a quantitative approach that uses data in the form of processed numbers to answer research problems. The data used to answer the problem formulation is primary data. Primary data was obtained using the employee survey method. Primary data is used as data to answer the formulation of research problems. The time horizon or time dimension of primary data collection is cross-sectional, which is data collection at the same time at a certain time and is only done once.

The research population is all employees of the Business Operation Support Department of PT Huawei Indonesia, which totals 100 people by 2024. Given the limited and homogeneous population (working in the same department with uniform standard operating procedures), this study uses a total sampling or census technique, where all members of the population are made as research respondents (Sugiyono, 2023).

Data collection is carried out through stages: (1) Formal licensing to the management of PT Huawei; (2) Socialization of research objectives to prospective respondents; (3) Online distribution of questionnaires using Google Forms during the period of January 2025; (4) Monitoring of response and follow-up levels to ensure that all questionnaires are filled; (5) Verify the completeness and consistency of respondents' answers.

Data analysis was conducted using SPSS software version 29 with the following stages: data quality test (validity test and reliability test), classical assumption test (normality test, multicollinearity

test, heteroscedasticity test), regression analysis, hypothesis test (t test (partial and f test (simultaneous) and determination coefficient test (r^2) to measure the proportion of variation in employee performance.

RESULTS and DISCUSSION

Result

Validity Test

Validity testing is carried out to ensure that each statement item in the questionnaire is able to accurately measure the construct in question.

Table 6. Test the validity of system digitization

Statement	R Count	R Table	Results
1	0.565	0.1966	Valid
2	0.493	0.1966	Valid
3	0.566	0.1966	Valid
4	0.514	0.1966	Valid
5	0.549	0.1966	Valid
6	0.401	0.1966	Valid
7	0.408	0.1966	Valid
8	0.397	0.1966	Valid
9	0.525	0.1966	Valid
10	0.419	0.1966	Valid
11	0.480	0.1966	Valid
12	0.595	0.1966	Valid
13	0.530	0.1966	Valid
14	0.536	0.1966	Valid
15	0.519	0.1966	Valid

Source: SPSS Output Version 29

All system digitization items have a calculated $r > r$ table (0.1966), indicating that all valid statements measure the system digitization construct (Sugiyono, 2023).

Table 7. Validity Test of Work Discipline

Statement	R Count	R Table	Results
1	0.479	0.1966	Valid
2	0.524	0.1966	Valid
3	0.597	0.1966	Valid
4	0.483	0.1966	Valid
5	0.503	0.1966	Valid
6	0.413	0.1966	Valid
7	0.564	0.1966	Valid
8	0.400	0.1966	Valid
9	0.504	0.1966	Valid
10	0.525	0.1966	Valid
11	0.537	0.1966	Valid
12	0.603	0.1966	Valid

Source: SPSS Output Version 29

Based on the results of the analysis in the table above, the work discipline variable shows that the calculated r value exceeds the r of the table (0.1966). This indicates that all questionnaire items meet the validity criteria, so that the research instrument is declared suitable for use in the further data processing process (Sugiyono, 2019).

Table 8. Validity Test of Employee Performance Variables

Statement	R Count	R Table	Results
1	0.576	0.1966	Valid
2	0.475	0.1966	Valid
3	0.570	0.1966	Valid
4	0.560	0.1966	Valid
5	0.484	0.1966	Valid

6	0.558	0.1966	Valid
7	0.554	0.1966	Valid
8	0.570	0.1966	Valid
9	0.561	0.1966	Valid
10	0.442	0.1966	Valid
11	0.548	0.1966	Valid
12	0.572	0.1966	Valid
13	0.628	0.1966	Valid
14	0.558	0.1966	Valid
15	0.519	0.1966	Valid
16	0.555	0.1966	Valid
17	0.610	0.1966	Valid
18	0.302	0.1966	Valid
19	0.563	0.1966	Valid
20	0.525	0.1966	Valid
21	0.542	0.1966	Valid

Source: SPSS Output Version 29

Based on the results of the analysis in the table above, the employee performance variable shows that the calculated r value exceeds the r of the table (0.1966). This indicates that all questionnaire items meet the validity criteria, so that the research instrument is declared suitable for use in the further data processing process (Sugiyono, 2019).

Feasibility Test

A reliability test was conducted to assess the consistency or stability of respondents' answers. This test serves to measure a questionnaire that is used as an indicator of a variable or construct. A questionnaire is declared reliable or reliable if the answers given by the respondents to the statements are consistent and stable over time.

Table 9. Feasibility Test

Variabel	Cronbach Alpha	Standar Cronbach Alpha	Results
System Digitization (X1)	0.782	0.60	Reliabel
Work Discipline (X2)	0.739	0.60	Reliabel
Employee Performance (Y)	0.877	0.60	Reliabel

Source: SPSS Output Version 29

All three variables showed good reliability with Cronbach's Alpha value > 0.60, indicating high internal consistency and reliable questionnaires (Ghozali, 2023).

Normality Test

Table 10. Kolmogorov-Smirnov Normality Test Results

Test Statistic	Asymp. Sig. (2-tailed)
0.082	0.091

Source: SPSS Output Version 29

Significance values of 0.091 > 0.05 indicate that the research residue is normally distributed, meeting the assumptions for regression analysis (Singh, 2019).

Multicollinearity Test

Table 11. Multicollinearity Test Results

Variabel	Tolerance	BRIGHT
System Digitization (X1)	0.271	3.689
Work Discipline (X2)	0.271	3.689

Source: SPSS Output Version 29

The Tolerance value of > 0.10 and VIF < 10 confirm that there is no multicollinearity between independent variables, so the regression model is feasible to use (Ghozali, 2023).

Heteroscedasticity Test

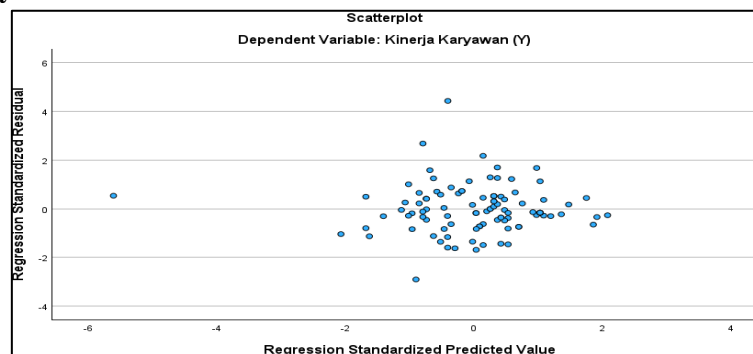


Figure 1. Scatterplot Heteroscedasticity Test Results

Source: SPSS Output Version 29

Based on the scatter plot, the dots are scattered randomly without forming a specific pattern, indicating no heteroscedasticity. The residual variance is constant (homoskedasticity), meeting the regression assumption.

Multiple Linear Regression Analysis

Table 12. Multiple Regression

Model	B	Std. Error	Beta	t	Itself.
(Constant)	-1.389	4.088	-	-0.340	0.735
System Digitization (X1)	0.548	0.123	0.363	4.455	0.001
Work Discipline (X2)	1.108	0.156	0.578	7.084	0.001

Source: SPSS Output Version 29

Regression equations formed: $Y = -1.389 + 0.548X1 + 1.108X2$

Interpretasi:

1. The system digitization coefficient (0.548) indicates that every increase of one digitization unit will increase the performance of 0.548 units
2. The coefficient of work discipline (1.108) was larger, indicating a stronger influence on performance
3. The negative constant (-1.389) is insignificant ($p=0.735$), indicating that without digitization and discipline, performance cannot be accurately predicted

Correlation Coefficient and Determination

Table 13 Correlation and Determination Coefficient Test Results

R	R Square	Adjusted R Square
0.908	0.825	0.821

Source: SPSS Output Version 29

1. The correlation coefficient $R = 0.908$ shows a very strong relationship between independent variables and employee performance
2. $R\text{ Square} = 0.825$ indicates that 82.5% of the variation in employee performance can be explained by the digitalization of the system and work discipline, the remaining 17.5% is influenced by other factors

Pengujian Hypothesis

Partial Test (t-test)

Table 14. Partial Test

Variabel	t count	t table	Sig.	Results
System Digitization (X1)	4.455	1.984	0.001	H1 accepted
Work Discipline (X2)	7.084	1.984	0.001	H2 accepted

Source: SPSS Output Version 29

1. H1: System digitalization has a significant positive effect on employee performance (t count 4.455 > t table 1.984; sig. 0.001 < 0.05)

2. H2: Work discipline has a significant positive effect on employee performance (t count 7,084 > t table 1,984; sig. 0.001<0.05)

Simultaneous Test (F Test)

Table 15 F Test Results

F count	F Table	Sig.	Results
228.574	3.090	<0.001	H3 accepted

Source: SPSS Output Version 29

H3: Digitalization of the system and work discipline simultaneously has a significant effect on employee performance (F count 228,574 > F table 3,090; sig. < 0.001).

Discussion

The Effect of System Digitalization on Employee Performance

The results of the study confirmed that system digitization had a positive and significant effect on employee performance with a regression coefficient of 0.548 and a t-value of 4.455 ($p < 0.001$). These findings are in line with the study by Cornelia et al. (2025) which found that digitalization has a positive impact on the performance of Bank Mandiri Lombok employees, as well as research by Shidqi et al. (2023) at Bank BNI which confirms the role of digitalization in increasing work effectiveness.

From a theoretical perspective, these results support the Technology Acceptance Model (Davis, 1989) which states that the perception of convenience and benefits of technology will encourage active adoption which in turn increases productivity. Pre-survey data shows that 90% of employees consider digital systems easy to understand and 80% feel the benefits—this positive perception transforms into actual performance improvements.

The mechanism of the influence of digitalization can be explained through several paths. First, **the efficiency of work processes**: digital systems eliminate duplication of tasks, speed up the flow of information, and reduce manual errors. This is evident from the decrease in the error rate from 6.5% (2020) to 5.1% (2024) as digital implementation matures. Second, **transparency and accountability**: digital monitoring allows for real-time performance evaluation, encouraging employees to work more effectively. Third, **access to information**: digitalization makes it easier to access knowledge bases and documentation, improving the quality of decisions.

However, the standardized beta digitization coefficient (0.363) was lower than that of work discipline (0.578), indicating that technology is not a single determinant of performance. This is consistent with the argument of Bondarouk et al. (2021) that e-HRM is only effective if it is supported by organizational behavioral factors. Westerman et al. (2019) emphasized that digital transformation is not just the adoption of technology, but holistic change involving people, processes, and culture.

The context of PT Huawei shows an interesting pattern: although intensive digitalization investment since 2019, its optimal impact will only be felt in the 2022-2024 period. This indicates a **learning curve** and **adaptation period** before technology is truly internalized in the work routine. As argued by Vial (2019), digital transformation is a continuous process that takes time to change the mindset and culture of the organization.

These findings also strengthen the view of Bharadwaj et al. (2013) about Digital Business Strategy, where technology must be integrated with the overall business strategy to generate competitive advantage. At PT Huawei, digitalization is not only an operational tool but also the foundation of the department's performance improvement strategy.

The Effect of Work Discipline on Employee Performance

Work discipline was proven to have the most dominant significant positive influence on employee performance with a regression coefficient of 1.108 and a t count of 7.084 ($p < 0.001$). The standardized beta coefficient of 0.578 confirms that the discipline makes the greatest relative contribution to the model, even surpassing the digitalization of the system.

These findings resonate with the research of Anggraini et al. (2024) at the Babelan District Office and Azis & Susanti (2024) at PT Panorama Tours which both identified discipline as a strong predictor of performance. Hertya Andriani et al. (2025) found that work discipline moderates the relationship between digital culture and performance, confirming the critical role of discipline in the context of modern organizations.

The dominance of work discipline can be explained through several perspectives. First, **behavioral consistency**: discipline ensures that work standards are applied consistently regardless of external conditions. Data shows that 2020 with the lowest discipline (92.1% attendance) correlated with the lowest KPI (76.0%), while the improvement in discipline in 2022 (96.2% attendance) was accompanied by a KPI rebound to 83.4%.

Second, the **multiplier effect**: disciplined employees not only improve individual performance but also create a positive work climate that influences other colleagues. As argued by Hasibuan (2021), discipline is the key to productivity because it creates order and predictability in the organization. Third, **organizational commitment**: discipline reflects the employee's psychological commitment to the organization, which according to Bajaba et al. (2021) is strongly correlated with work performance.

From the perspective of human resource management, these findings reinforce the classic view of Siswanto (2021) that effective workforce management starts from strengthening discipline as a foundation. Flippo (2018) emphasized that without discipline, any modern management system, including digitalization, will lose its effectiveness.

Interestingly, the pre-survey data shows a paradox: although 77% of employees are able to leverage digital technology, only 33% are consistently disciplined. This gap explains why discipline has greater influence because it is the **missing link** that hinders the full potential of technology realization. Kusjono and Rahim (2021) identified a similar phenomenon where high digital competence does not automatically produce optimal performance without strong work discipline.

Furthermore, the context of the pandemic provides valuable learning. The year 2020-2021 shows that working from home without direct supervision exposes the importance of self-discipline. When formal structures are weakened, only employees with internalized discipline are able to maintain productivity. This is in line with the findings of Kniffin et al. (2020) about COVID-19 and workplace, where remote work requires a higher level of discipline and self-regulation than face-to-face.

The managerial implications are clear: investment in discipline enforcement through monitoring, reward-punishment, and work culture development will provide a higher ROI than technology investment alone. As argued by Priansa & Setiana (2022), supervision and discipline management are the core of effective people management.

The Simultaneous Influence of System Digitalization and Work Discipline on Employee Performance

Simultaneous testing yielded an F count of 228.574 ($p = 0.001$) with $R^2 = 0.825$, confirming that the combination of system digitization and work discipline together exerts a very strong influence on employee performance. The model is able to explain 82.5% of the variation in performance, showing an excellent fit.

These findings are in line with Susanti et al. (2023) who found the effect of synergy between digitalization and work discipline in improving the performance of Indonesian companies. Suparman and Sugiyanto (2022) identified a similar pattern where digital culture and work discipline reinforce each other in the context of work from home at the Directorate General of Dukcapil.

The synergy mechanism can be understood through the concept of **complementarity** in organizational theory. Digitalization provides infrastructure and tools that increase productivity potential, while discipline ensures that potential is truly realized through consistent execution. As analogized by Westerman et al. (2014), digitization is "hardware" and discipline is "software"—both must function optimally to produce maximum output.

The regression equation $Y = -1.389 + 0.548X_1 + 1.108X_2$ shows that increasing one unit of digitization along with one unit of discipline will increase performance by 1.656 units ($0.548 + 1.108$). This combined effect is greater than the individual effects of each variable, confirming the existence of a **positive interaction effect**.

From the perspective of the Digital Transformation Framework (Schwab, 2016), the success of Industry 4.0 does not only depend on technology but also on adaptive and disciplined human capital. PT Huawei as a global technology company demonstrates that competitive advantage in the digital era does not come from advanced technology alone, but from the ability to integrate technology with a strong work culture.

The contribution of this research to the TAM theory is to expand the model by adding a behavioral discipline dimension as a moderator between technology acceptance and performance outcomes. So far, TAM has focused on adoption and usage intention, but this study shows that disciplined usage behavior is an important mediator towards improved performance.

The strategic implication for the organization is the need for a **dual-track approach**: on the one hand continue to invest in upgrading the digital system, on the other hand strengthening the enforcement and internalization of discipline through training, cultural intervention, and performance management systems. Lemoine et al. (2020) emphasized the importance of human-centered performance management that balances technological and behavioral aspects.

Banjarnahor et al. (2022) argue that digital transformation must be accompanied by organizational behavior transformation. The findings of this study provide empirical evidence for the argument—that undisciplined digitization will only result in marginal performance improvements, while the combination of the two produces an exponential effect.

It is important to note that although the model explains 82.5% of performance variations, there are still 17.5% that are influenced by other factors such as leadership style (Kaehler & Grundei, 2019), organizational culture (Marco Orel, 2023), motivation (Azis & Susanti, 2024), and work environment (Anggraini et al., 2024). This opens up further research opportunities to develop more comprehensive models.

CONCLUSION

Based on the data analysis and discussions that have been carried out, this study produces several important conclusions:

System digitalization has a significant positive effect on the performance of employees of PT Huawei Indonesia's Business Operation Support Department ($t=4.455$; $\beta=0.363$; $p=0.001$). The implementation of digital technology has been proven to increase efficiency, reduce errors, and improve the quality of work. However, the effect of digitalization is only optimal after passing the adaptation phase of 2-3 years.

Work discipline had a significant positive effect on employee performance with the most dominant contribution ($t=7.084$; $\beta=0.578$; $p=0.001$). Discipline in punctuality, procedural compliance, and consistency of work standards are the strongest predictors of performance improvement. These findings confirm that behavioral factors remain the key to productivity in the digital age.

Digitalization of the system and work discipline simultaneously had a very significant effect on employee performance ($F=228,574$; $R^2=82.5\%$; $p=0.001$). The combination of the two produces a stronger synergy effect than individual influences. The research model was able to explain 82.5% of the variation in performance, showing an excellent fit.

BIBLIOGRAPHY

1. Abdullah, K., Jannah, M., & Aiman, U. (2022). Quantitative research methodology. Muhammad Zaini Publisher.
2. Aditama, R. A. (2023). Management of theoretical strategies, applications and case studies. AE Publishing.
3. Afandi, P. (2021). Human resource management (theories, concepts and indicators). Zanafa Publishing.
4. Aisyah, S., Rohma, N. A., & Mawarni, K. E. (2025). Digital transformation in financial management: Its impact on investment decision-making. *Proceedings of the National Seminar on Management*, 4(1), 1164–1168.
5. Andriani, H., Anggraini, D. U., & Ishak. (2025). The influence of digital culture on employee performance with work discipline as a moderating variable. *International Journal of Management Studies*, 4(1), 190-195.
6. Anggraini, S. D., Rony, Z. T., & Sari, R. K. (2024). The influence of work environment and work discipline on the performance of employees of the Babelan District Office. *Journal of Entrepreneurship and Multi Talent (JKMT)*, 2(1), 49–58.

7. Azis, Z., & Susanti, F. (2024). The Influence of Work Discipline and Work Motivation on Employee Performance at PT Panorama Tours in West Jakarta. *Proceedings of the National Seminar on Management*, 3(2), 23068–23076.
8. Bajaba, S., Aboramadan, M., & Waldrop, J. (2021). Job crafting as a predictor of employee performance. *Employee Relations*, 43(3), 748–764. <https://doi.org/10.1108/ER-09-2020-0443>
9. Banjarnahor, A. R., Sinaga, J. B. M., Handiman, U. T., Samosir, K., Purba, B., Siagian, V., Gandasari, D., Army, W. L., Harriet, Sihotang, J. I., Nugroho, A., Hasan, M., Kafrawi, A., Rahman, E., Rahman, A. B., & Djufri, I. (2022). Digital transformation and organizational behavior. Our Writing Foundation.
10. Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). Digital business strategy: Toward a next generation of insights. *MIS Quarterly*, 37(2), 471–482. <https://doi.org/10.25300/MISQ/2013/37:2.3>
11. Bondarouk, T., Harms, R., & Lepak, D. (2021). Does e-HRM lead to better HRM service? *The International Journal of Human Resource Management*, 28(9), 1332–1362. <https://doi.org/10.1080/09585192.2015.1118139>
12. Cornelia, C., Algifani, M. G., Widiyasti, B. D., & Wardi, P. A. (2025). The influence of the digitalization system on employee performance at Bank Mandiri Lombok. *Journal of Economics and Business*, 2(1), 15–20.
13. Creswell, J. W., & Creswell, J. D. (2020). Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.). SAGE Publications.
14. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
15. Deswita, D. F., Fauziyah, S. N., Geusantika, S. G., Oktaviani, N., & Poetri, S. D. (2025). The Effect of Work Discipline on Employee Performance at Bank Sumedang. *Journal of Applied Finance and Management*, 6(2), 517–525.
16. Dewi, D. P., & Harjoyo. (2020). Human resource management (1st ed.). Unpam Press.
17. Elmi, R., Susanto, A., & Wijaya, H. (2024). Digital infrastructure and organizational performance. *Journal of Information Technology and Business*, 10(1), 25–40.
18. Flippo, E. B. (2018). Personnel management (6th ed.). Primary Script Gelora.
19. Frost, N. A. (2023). Qualitative research methods in psychology: Combining core approaches (2nd ed.). McGraw Hill.
20. Ghanad, A. (2023). An overview of quantitative research methods. *International Journal of Multidisciplinary Research and Analysis*, 6(8), 3519–3527. <https://doi.org/10.47191/ijmra/v6-i8-12>
21. Ghazali, I. (2023). Application of multivariate analysis with the IBM SPSS 26 program (10th ed.). Publishing Agency of Diponegoro University.
22. Gunawan, A. (2025). Digital leadership for Industry 5.0: Integration of people, technology and industry. Hosted by Innovatix Labs.
23. Gustina, A. A. (2024). The Effect of Work Discipline on Employee Performance at the Regional Drinking Water Company (PDAM) of Bandung City [Unpublished undergraduate thesis]. Sangga Buana University.
24. Handoko, T. H. (2021). Personnel and human resource management (2nd ed.). BPFE.
25. Hardani, Andriani, H., & Juliana, D. (2020). Qualitative & quantitative research methods. Science Library.
26. Hartatik, I. P. (2023). Practical books develop human resources. Laksana.
27. Hasibuan, M. S. P. (2021). Human resource management (Revised ed.). The Earth of Scripts.
28. Iba, Z., & Wardhana, A. (2023). Research methods. Eureka Media Script.
29. Ilyas, A., & Bahagia, B. (2021). The effect of digitization of public services on employee performance during the pandemic in education and training institutions. *Educational: Journal of Educational Sciences*, 3(6), 5231–5239. <https://doi.org/10.31004/edukatif.v3i6.1644>
30. Irawan, D., Kusjono, G., & Suprianto. (2021). The Influence of Work Discipline and Work Environment on the Performance of Civil Servants at the Serpong District Office. *Student Scientific Journal (JIMAWA)*, 1(3), 176–185.
31. Jaenudin, Putra, F. W., Desilfa, F., & Ahmaddien, I. (2020). The influence of leadership style, motivation, and work discipline on employee performance at PT. Huawei Tech Investment. *Journal of Economic and Business Dynamics*, 17(2), 131–141. <https://doi.org/10.34001/jdeb.v17i2.1268>

32. Jepry, M., Lestari, D., & Sari, A. (2020). The influence of work discipline on employee performance. *Indonesian Journal of Management and Business*, 6(1), 80–90.
33. Kaehler, B., & Grundei, J. (2019). HR governance: A theoretical introduction. Springer. <https://doi.org/10.1007/978-3-662-58799-8>
34. Kniffin, K. M., Narayanan, J., Anseel, F., Antonakis, J., Ashford, S. P., Bakker, A. B., Bamberger, P., Bapuji, H., Bhawe, D. P., Choi, V. K., Creary, S. J., Demerouti, E., Flynn, F. J., Gelfand, M. J., Greer, L. L., Johns, G., Keesbir, S., Klein, P. G., Lee, S. Y., ... van Vugt, M. (2020). COVID-19 and the workplace: Implications, issues, and insights for future research and action. *American Psychologist*, 76(1), 63–77. <https://doi.org/10.1037/amp0000716>
35. Kotler, P., & Armstrong, G. (2019). *The Principles of Marketing* (12th ed.). Erlangga.
36. Kusjono, G., & Rahim, R. (2021). The influence of digital transformation and organizational culture on employee performance. *Scientific Journal of Management, Economics, and Accounting*, 5(2), 412–428.
37. Kusjono, G., Sunarsi, D., & Nurjaya. (2022). Digital leadership and organizational discipline: The key to success in the Industry 4.0 era. *Journal of Effective Economics*, 4(3), 340–352. <https://doi.org/10.32493/JEE.v4i3.19847>
38. Laudon, K. C., & Laudon, J. P. (2020). *Management information systems: Managing the digital firm* (16th ed.). Pearson.
39. Lemoine, G. J., Hartnell, C. A., & Leroy, H. (2019). Taking stock of moral approaches to leadership: An integrative review of ethical, authentic, and servant leadership. *The Academy of Management Annals*, 13(1), 148–187. <https://doi.org/10.5465/annals.2016.0121>
40. Ly, P. T. M. (2020). Digital transformation and information systems adaptation. *Journal of Information Systems Research*, 31(4), 110–129.
41. Mangkunegara, A. A. A. P. (2017). *Corporate human resource management*. Teenager Rosdakarya.
42. Nazir, M. (2019). *Research methods*. Ghalia Indonesia.
43. Nurfajrin, S., & Maryono, D. (2025). Analysis of employee work discipline on the performance of the Panyadap Village Office. *ELPEI Management Online Journal (JOMEL)*, 5, 1631–1636.
44. Orel, M. (2023). The influence of coworking spaces and digital technology on employee performance: Supporting work-life balance. *Equality, Diversity and Inclusion: An International Journal*, 46(1), 10–15. <https://doi.org/10.1108/EDI-03-2022-0087>
45. Priansa, D. J., & Setiana, S. S. (2022). *Educational management and supervision*. Pustaka Setia.
46. Purwanza, S. W., Wardhana, A., & Mufidah, A. I. (2022). *Quantitative, qualitative, and combination research methodologies*. Indonesian Science Media.
47. Purwatiningsih. (2022). The Effect of Digitalization and Data Center on Employee Performance of PT. XYZ. *Scientific Journal of Management Science*, 9(2), 130–136.
48. Rivai, V. (2019). *Human resource management for companies: From theory to practice* (3rd ed.). Raja Grafindo Persada.
49. Rohman, A., Nashrullah, M., & Maharani, O. (2023). *Educational research methodology: Research procedures, research subjects, and development of data collection techniques*. University of Muhammadiyah Sidoarjo Press.
50. Saat, S., & Mania, S. (2020). *Introduction to research methodology* (2nd ed.). The Legacy of Almaida.
51. Schwab, K. (2016). *The fourth industrial revolution*. World Economic Forum.
52. Shidqi, M. F., Darmastuti, I., & Wicaksono, B. S. (2023). The effect of digitization of company systems on employee performance through job satisfaction as an intervening variable. *Diponegoro Journal of Management*, 12(1), 1–8.
53. Singgih, S. (2019). *Proficient in parametric statistics*. Elex Media Komputindo.
54. Siswanto, B. (2021). *Indonesian workforce management: An administrative and operational approach*. The Earth of Scripts.
55. Sugiyono. (2023). *Business research methods: Quantitative, qualitative, combination, and R&D approaches* (3rd ed.). Alphabet.
56. Suparman, R. C., & Sugiyanto, E. (2022). The influence of digital culture and work discipline on employee performance during the WFH period at the Directorate General of Dukcapil in 2020–2021. *Populism: Journal of Social and Humanities*, 7(2), 324–338. <https://doi.org/10.47313/ppl.v7i2.1845>

57. Susanti, E., Nugroho, H., & Putri, A. (2023). Digitization of work systems and discipline in improving the performance of Indonesian companies. *Indonesian Journal of Economics and Management*, 8(2), 55–70.
58. Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, 28(2), 118–144. <https://doi.org/10.1016/j.jsis.2019.01.003>
59. Westerman, G., Bonnet, D., & McAfee, A. (2014). *Leading digital: Turning technology into business transformation*. Harvard Business Review Press.
60. Westerman, G., Bonnet, D., & McAfee, A. (2019). The nine elements of digital transformation. *MIT Sloan Management Review*, 60(2), 1–6.
61. Yuliawati, E., & Oktavianti, N. (2024). The effect of work discipline and work motivation on employee performance at PT. Rewash South Jakarta. *Horizon: Journal of Economics, Management and Business*, 1(1), 52–60.
62. Zhang, J., & Chen, Z. (2020). Integration of digital technologies in business processes. *International Journal of Information Management*, 51, 102–118. <https://doi.org/10.1016/j.ijinfomgt.2019.11.002>
63. Zillah, F., Husniati, R., & Aziz, A. (2021). The effect of training, supervision, and work discipline on employee performance. *Management and Organizational Science Studies (SIMO)*, 3(1), 213–232. <https://doi.org/10.35912/simo.v3i1.784>