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The Effect of Competency and Supporting System on the Performance of Correctional Database System (SDP) Operators with Workload as a Moderating Variable

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Abstract

Objective – This study aims to examine the effect of competency and supporting system on the performance of Correctional Database System (SDP) operators, as well as to test the moderating role of workload in those relationships. Unlike previous studies that mainly examined competency or information systems independently, this study integrates competency, supporting system, and workload within the Modern Resource-Based View to explain operator performance in the correctional digital governance context. The novelty of this study lies in revealing an asymmetric moderating pattern of workload, which strengthens the effect of competency but weakens the effect of supporting system on performance, offering a more nuanced understanding than the conventional assumption that workload uniformly impairs performance.

Design/Methodology/Approach – This research employs a quantitative approach with explanatory research design. Data were collected through questionnaires distributed to 100 SDP operators from correctional institutions (Lapas/Rutan) using saturated sampling. Hypotheses were tested using Partial Least Square–Structural Equation Modeling (PLS-SEM) via SmartPLS.

Findings – Competency and supporting system both have a significant positive effect on operator performance. Workload positively moderates the effect of competency on performance, while negatively moderating the effect of supporting system on performance. The model explains 72.1% of the variance in operator performance.

Implications – Operator performance in digital correctional governance is determined by an integrated interplay of human capital, technological resources, and workload capacity management as framed by the Modern Resource-Based View. Organizations should prioritize competency development alongside proportional workload management to optimize system utilization.

Keywords: Competency, Correctional Database System, Operator Performance, Supporting System, Workload.

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INTRODUCTION

The management of correctional data through the Correctional Database System (SDP) is a crucial issue in the administration of Indonesian correctional institutions. SDP operators bear significant responsibilities, ranging from inputting inmate data, verifying information, and updating records to conducting risk assessments that determine inmates' security classifications and rehabilitation programs (Saputra et al., 2023; Sutrisno et al., 2023). However, field observations reveal recurring challenges like delays in data entry, data inaccuracies, and a high rate of human error that could lead to erroneous administrative decisions. These issues are exacerbated by a limited number of operators, high data volumes, unstable internet connections, and recurring application glitches conditions that widen the gap between job demands and available resource capacity, thereby necessitating a systematic review of the factors affecting SDP operator performance.

Competence is one of the key determinants of an operator's effectiveness in completing administrative tasks, whether technical or analytical. Shuhaimi et al (2023)explain that competence encompasses technical skills, knowledge, personal characteristics, and individual motivations that influence work quality. For SDP operators, competence is crucial because their work demands high precision in data entry, a deep understanding of correctional facility SOPs, and the ability to evaluate information for mapping inmate risks. Operators with strong competencies can minimize data entry errors and accelerate data processing, whereas weak competencies risk causing data inaccuracies that have far-reaching impacts on inmate registration, security, and rehabilitation processes (Prabowo et al., 2025; Tusriyanto et al., 2023). Human Capital Theory Becker (2003) asserts that human resource capabilities are assets that directly determine organizational productivity, reinforcing the role of competence as a crucial variable in this context.

In addition to individual competencies, the quality of the support system also determines an operator's success. Delone & Mclean (2003) state that the quality of an information system is determined by application stability, information quality, and the availability of technical support. In the context of SDP, the support system includes computer hardware, internet connectivity, application reliability, the availability of facilities such as scanners and printers, and clear standard operating procedures (SOPs) for system use. Suboptimal support systems generally create obstacles in the form of system failures, slow connections, and unclear work guidelines, thereby hindering the smooth flow of administrative tasks. Sociotechnical Systems Theory states that individual performance is optimal when there is harmony between the technical and social dimensions of the work environment (Gamage et al., 2025; Tortorella et al., 2023).Thus, the quality of the support system is a crucial factor that can either strengthen or weaken the performance of SDP operators.

Workload is also a key factor in operators' effectiveness in managing correctional data. A high workload whether in terms of task volume, time pressure, or task complexity can lead to physical and mental fatigue, which reduces operators' accuracy and productivity. Khalil et al (2020) explain that role overload can trigger stress, role confusion, and decreased performance. In the context of the SDP, operators often face spikes in data volume, particularly when there is an increase in the number of inmates, data updates, or system disruptions that lead to a backlog of work. The Mental Workload concept indicates that high cognitive load increases the likelihood of errors in data entry and risk mapping (Dimitrakopoulos et al., 2023; Wickens, 2008), while the Job Demand-Resources (JD-R) Model asserts that workload has the potential to moderate the relationship between individual capabilities and performance (Bakker & Demerouti, 2017; Diantara & Arief, 2024). Therefore, workload is a critical variable to examine in understanding variations in SDP operator performance.

Previous research has generally focused on the technical aspects of information systems or human resource training in isolation, without examining the interaction between individual capabilities, the quality of support systems, and workload (Falcone et al., 2020; Kiran et al., 2022), and very few studies have positioned workload as a moderating variable in the context of digital operators within correctional settings. The novelty of this study lies in a model that examines the influence of competencies and support systems on operator performance, with workload as a moderator, within the framework of the Modern Resource-Based View (RBV). This integration offers a new understanding that performance effectiveness does not stem solely from human resources and technology in isolation, but rather from the organization's capacity to manage both simultaneously. This study aims to fill this gap while providing practical contributions to improving correctional data governance. Specifically, this study hypothesizes that: Specifically, this research hypothesizes that: (H1) competency has an effect on SDP operator performance; (H2) supporting system has an effect on SDP operator performance; (H3) workload moderates the effect of competency on SDP operator performance; and (H4) workload moderates the effect of supporting system on SDP operator performance.

METHODS

This study employs a quantitative approach with an explanatory research design, aiming to explain causal relationships among competency, supporting system, and workload variables with respect to SDP operator performance, while also testing the moderating role of workload. The explanatory approach provides a solid foundation for empirical hypothesis testing through inferential statistical analysis using PLS-SEM (Sugiyono, 2019). PLS-SEM was selected over covariance-based SEM (CB-SEM) for two main methodological reasons relevant to this study. First, with a total sample of 100 respondents, PLS-SEM is more appropriate given its ability to produce stable parameter estimates in small-to-moderate sample sizes, whereas CB-SEM typically requires larger samples to achieve asymptotic efficiency (Hair et al., 2022). Second, PLS-SEM does not require the assumption of multivariate normality, which suits Likert-scale survey data that frequently deviate from normal distribution. Moreover, PLS-SEM is appropriate for complex research models with relatively small sample sizes and does not require multivariate normality assumptions (Hair et al., 2022). The research was conducted at correctional institutions (Lapas/Rutan) that actively utilize SDP, selected purposively based on the criterion that the unit has SDP operators performing registration, data input, data updating, and prisoner risk mapping functions.

The research population consisted of all SDP operators in correctional work units who perform data management tasks using SDP, including registration, administration, and security administration sections. Saturated sampling was employed, meaning all population members were used as respondents, yielding a total sample of 100 respondents (Sugiyono, 2019). All operators actively using SDP for at least six months and involved in data input, verification, or risk mapping were included. This approach provides comprehensive data coverage and eliminates selection bias.

Primary data were collected via questionnaires using a 1–5 Likert scale. Secondary data were sourced from institutional administrative documents including SDP usage SOPs, organizational structures, task distribution records, and official documents from the Ministry of Law and Human Rights. Table 1 presents the variable operationalization.

Table 1. Variable identification

Variable	Definition	Indikator Variabel
Competency	The level of operator ability encompassing knowledge, technical skills, precision, SOP understanding, and problem-solving in data input and risk mapping (Becker et al., 1964; Spencer & Spencer, 1993)	- Knowledge of correctional SOP - Mastery of SDP application - Precision in data verification - Technical system operation skills - Problem-solving ability
Supporting System	The condition of work support facilities including technology devices, internet network, SDP application reliability, technical SOPs, and IT maintenance support (Delone & Mclean, 2003)	- Network stability - Application access speed - Computer hardware reliability - Completeness of technical SOP - Availability of IT support - Work environment comfort
Workload	Operator perception of task volume, time pressure, task complexity, administrative responsibilities, and accuracy demands in data management (Demerouti et al., 2001; Lubis, 2022)	- Daily task volume - Time pressure - Input and risk mapping complexity - Required concentration level - Frequency of overtime
Operator Performance	Operator ability to complete SDP tasks on time, accurately, per procedure, while maintaining correctional service quality (Cagnazzo et al., 2010; Varadejsatitwong & Banomyong, 2022; Villanova et al., 1993)	- Timeliness of data input - Data verification accuracy - Data processing speed - SOP compliance - Risk mapping accuracy - Work productivity - Task responsibility

Source: Concept developed in this research, 2026

Validity testing was conducted using Outer Loading and Average Variance Extracted (AVE) through PLS-SEM analysis, with an indicator valid if outer loading > 0.70 and AVE > 0.50 (Hair et al., 2022). Reliability was assessed via Composite Reliability and Cronbach's Alpha, both requiring minimum values of 0.70. Discriminant validity was evaluated using the Heterotrait-Monotrait Ratio (HTMT) with acceptable values below 0.90, and the Fornell-Larcker criterion. The structural model was assessed via R-Square, path coefficients, and predictive relevance (Q^2). Moderation effects were tested using interaction terms through bootstrapping with 5,000 subsamples. A hypothesis is accepted when T-statistic > 1.96 and p-value < 0.05 (Hair et al., 2022).

RESULTS AND DISCUSSION

Table 2 presents the descriptive statistics for each research variable based on 100 respondents.

Table 2. Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Dev
Competency	100	1	5	3.52	0.983
Supporting System	100	1	5	3.87	0.871
Workload	100	1	5	3.67	0.846
Operator Performance	100	1	5	3.63	0.936

Based on Table 2, all variables show mean values in the range of 3.52 to 3.87, indicating that respondents' overall perceptions tend toward positive across all constructs. Supporting System recorded the highest mean (3.87), reflecting respondents' generally favorable assessment of the technological infrastructure and work environment available to SDP operators. Competency recorded the lowest mean (3.52), suggesting that while operators are broadly capable, there remains room for improvement, particularly in data verification precision, which was the weakest individual indicator in the competency construct. Standard deviations ranging from 0.846 to 0.983 indicate sufficiently homogeneous responses around the mean, confirming the data is suitable for further analysis.

Table 3 presents the results of the measurement model evaluation, including outer loading values, AVE, and reliability indices.

Table 3. Outer Loading, AVE, and Reliability

Indicator	Construct	Outer Loading	AVE	Cronbach's Alpha	CR (rho_c)
KOMP1	Competency	0.887			
KOMP2	Competency	0.858			
KOMP3	Competency	0.855			
KOMP4	Competency	0.840			
KOMP5	Competency	0.704	0.691	0.887	0.918
SS1	Supporting System	0.828			
SS2	Supporting System	0.855			
SS3	Supporting System	0.857			
SS4	Supporting System	0.832			
SS5	Supporting System	0.704			
SS6	Supporting System	0.744	0.648	0.892	0.917
BK1	Workload	0.872			
BK2	Workload	0.799			
BK3	Workload	0.914			

BK4	Workload	0.861			
BK5	Workload	0.749	0.707	0.899	0.923
KO1	Operator Performance	0.793			
KO2	Operator Performance	0.816			
KO3	Operator Performance	0.851			
KO4	Operator Performance	0.890			
KO5	Operator Performance	0.824			
KO6	Operator Performance	0.756			
KO7	Operator Performance	0.895	0.695	0.926	0.941

All indicators have outer loading values above 0.70, confirming convergent validity. AVE values for all constructs exceed 0.50, and both Cronbach's Alpha (0.887–0.926) and Composite Reliability (0.917–0.941) are well above the 0.70 threshold, confirming adequate reliability across all constructs (Hair et al., 2022).

Table 4 presents the Heterotrait-Monotrait Ratio (HTMT) for discriminant validity assessment.

Table 4. Heterotrait-Monotrait Ratio (HTMT)

Variable	Workload	Operator Performance	Competency	Supporting System
Workload	—			
Operator Performance	0.108	—		
Competency	0.098	0.820	—	
Supporting System	0.112	0.852	0.823	—

All HTMT values between constructs are below the 0.90 threshold. The highest value is between Supporting System and Operator Performance (0.852), still within the acceptable range. This confirms that each construct in the model has sufficient conceptual distinctiveness, satisfying discriminant validity requirements.

Table 5 presents the R-Square value as an indicator of the structural model's explanatory power.

Table 5. R-Square

Variable	R-Square	R-Square Adjusted
Operator Performance	0.721	0.706

The R-Square value of 0.721 indicates that 72.1% of the variance in Operator Performance is explained by Competency, Supporting System, Workload, and their interaction effects. This is

classified as a strong model (Hair et al., 2022). The Predictive Relevance value ($Q^2 = 0.721$) further confirms the model's strong predictive capability.

Table 6 presents the complete hypothesis testing results obtained through bootstrapping with 5,000 subsamples.

Table 6. Hypothesis Testing Results (Path Coefficients)

Hypothesis	Relationship	β	T-Statistic	P-Value	Result
H1	Competency → Operator Performance	0.455	4.646	0.000	Accepted
H2	Supporting System → Operator Performance	0.415	4.078	0.000	Accepted
H3	Workload × Competency → Operator Performance	0.219	2.402	0.016	Accepted
H4	Workload × Supporting System → Operator Performance	-0.266	2.378	0.017	Accepted

Competency and Operator Performance (H1)

The results demonstrate that competency has a significant positive effect on SDP operator performance ($\beta = 0.455$; $p < 0.001$), indicating that competency is the strongest determinant of performance within the proposed model. This finding supports Human Capital Theory, which argues that employees' knowledge, technical skills, and abilities represent strategic organizational assets capable of generating superior performance (Becker et al., 1964). From the perspective of the Modern Resource-Based View (RBV), competency constitutes an internal organizational resource that is valuable, difficult to imitate, and capable of creating sustainable performance advantages.

The positive relationship can be explained by the characteristics of SDP operators' work, which requires a high degree of procedural consistency, technical accuracy, and compliance with correctional regulations. Operators possessing higher competency are more capable of understanding standard operating procedures, identifying data inconsistencies, and processing prisoner information accurately despite handling large volumes of administrative tasks. Consequently, competency enables operators to minimize data-entry errors while maintaining service quality and administrative efficiency. These findings are consistent with previous studies emphasizing that digital competency significantly enhances employee performance in public sector organizations (Azwir et al., 2025; Sukhemi & Sari, 2023).

Interestingly, this finding contrasts with several prior studies suggesting that competency effects tend to be weaker in highly digitalized public-sector settings, where system automation is argued to compensate for individual skill gaps (Kiran et al., 2022). The present study's stronger competency effect may be explained by the fact that SDP still requires substantial manual judgment such as interpreting inmate risk indicators and cross-verifying inconsistent records tasks that automation cannot fully replace. This suggests that competency's influence on performance is not uniform across digital systems, but depends on the degree of discretionary judgment embedded in the operator's role. Where systems are more rule-based and fully automated, the marginal contribution of individual competency would likely diminish**.**

However, the descriptive analysis indicates that data verification precision recorded the lowest mean among competency indicators. This suggests that although operators generally perceive themselves as competent, repetitive administrative work may gradually reduce attentional focus and increase the likelihood of human error. According to the Mental Workload Theory

(Wickens, 2008), repetitive cognitive activities continuously consume attentional resources, making even competent employees susceptible to inaccuracies during prolonged routine operations. Therefore, competency alone cannot completely eliminate operational errors without adequate organizational support to maintain cognitive performance.

Theoretically, this finding reinforces the Modern RBV by confirming that competency remains the organization's most resilient internal resource in highly structured digital work environments. More specifically, it extends RBV's VRIN framework (valuable, rare, inimitable, non-substitutable) by showing that competency's non-substitutability is context-dependent rather than absolute it is strongest precisely where technological substitution is incomplete. Unlike technological resources, competency is embedded within employees and therefore remains available even when external operational conditions become less favorable.

Supporting System and Operator Performance (H2)

Supporting system also exerts a significant positive influence on operator performance ($\beta = 0.415$; $p < 0.001$). This finding supports Sociotechnical Systems Theory, which argues that organizational performance emerges from the alignment between human capabilities and technological infrastructure (Emery & Trist, 1965; Gaur et al., 2023). In correctional institutions, supporting systems including hardware reliability, internet connectivity, application stability, technical support, and operational procedures provide the technological foundation enabling operators to execute administrative tasks efficiently.

The positive effect occurs because SDP operators rely extensively on digital infrastructure to process prisoner registration, update correctional records, and conduct risk assessments. Stable technological resources reduce interruptions, shorten processing time, and improve work continuity, thereby allowing operators to utilize their competencies more effectively. The relatively high mean score for supporting systems further indicates that respondents generally perceive the existing technological infrastructure as supportive of their daily responsibilities.

This finding also diverges from studies in more resource-constrained public institutions where supporting systems emerged as the dominant predictor, outweighing individual competency (Falcone et al., 2020). A plausible explanation is that SDP operators in this study already report relatively high infrastructure adequacy (mean = 3.87), suggesting a ceiling effect: once systems reach a baseline level of reliability, further technological improvement yields diminishing returns relative to strengthening human capability. This implies that the relative weight of supporting systems versus competency in predicting performance may shift depending on an institution's baseline infrastructure maturity a boundary condition not addressed in prior single-context studies.

Nevertheless, this finding should not be interpreted as suggesting that technological infrastructure alone guarantees superior performance. The relatively weaker score for technical SOP completeness indicates that operators often depend on personal experience when formal procedural guidance is insufficient. Under such circumstances, even sophisticated technological infrastructure may not produce optimal performance if employees lack standardized operational guidance or sufficient competency to utilize available system features effectively. This observation confirms that technological resources generate greater organizational value only when complemented by adequate human capability and procedural clarity.

From a theoretical perspective, these findings extend Sociotechnical Systems Theory by demonstrating that the effectiveness of technological resources depends not only on system quality but also on organizational governance mechanisms that ensure technology is consistently utilized

according to standardized procedures. This contributes a maturity-contingent refinement to Sociotechnical Systems Theory: the technical-social alignment the theory prescribes is not static but shifts in emphasis as an organization's technological baseline matures.

The Moderating Role of Workload on the Competency–Performance Relationship (H3)

The results reveal that workload positively moderates the relationship between competency and operator performance (β = 0.219; p = 0.016). This finding is particularly noteworthy because it contrasts with the conventional assumption that workload generally weakens employee performance. Instead, workload strengthens the positive contribution of competency among SDP operators.

This phenomenon can be explained through the Challenge Hindrance Stressor Framework (Cavanaugh et al., 2000; Mazzola & Disselhorst, 2019). In highly structured work environments such as correctional administration, increasing workload may function as a challenge stressor rather than a hindrance stressor. Competent operators possess stronger procedural knowledge, better technical mastery, and greater confidence in performing repetitive administrative tasks. Consequently, when workload increases, these employees are able to maintain efficiency and accuracy because their competencies enable them to adapt more effectively to rising work demands.

The result also reflects the unique characteristics of correctional administrative work. Most SDP activities follow standardized procedures with clearly defined outputs, allowing experienced operators to process larger workloads without substantial deterioration in performance. In this context, workload becomes an opportunity for competent employees to demonstrate superior capability rather than merely representing an operational burden.

This pattern also departs from studies applying Conservation of Resources (COR) theory (Hobfoll, 1989), which typically predict that any increase in demands erodes performance regardless of employee capability, since resource loss is assumed to be universally depleting. The present finding suggests a boundary condition to COR: when task demands are procedurally structured and predictable as in SDP data entry and risk mapping competent employees may experience workload increases as resource-building (skill activation) rather than resource-depleting events, a distinction COR does not explicitly differentiate.

However, this positive moderation may not necessarily occur in organizational environments characterized by ambiguous tasks, emotional labor, or high levels of uncertainty. Under those conditions, excessive workload could rapidly deplete employees' psychological resources and eventually reduce the beneficial effect of competency on performance. Therefore, the positive moderating effect observed in this study should be interpreted within the context of highly standardized administrative work rather than generalized across all occupational settings.

Theoretically, this finding enriches the Challenge Hindrance Stressor Framework by suggesting that workload does not universally impair employee performance. Instead, its impact depends on the nature of organizational tasks and the quality of employees' internal resources. It further implies that the challenge/hindrance classification of a stressor is not a fixed property of the stressor itself, but an interaction effect between task structure and individual capability a refinement worth testing in future cross-occupational research.

The Moderating Role of Workload on the Supporting System–Performance Relationship (H4)

The analysis further demonstrates that workload negatively moderates the relationship between supporting system and operator performance (β = –0.266; p = 0.017). This indicates that

the positive contribution of technological resources gradually weakens as workload becomes increasingly excessive.

The Job Demands–Resources (JD-R) Model provides a suitable explanation for this finding. Although supporting systems represent valuable organizational resources, excessive job demands consume employees' cognitive and attentional capacities, limiting their ability to fully utilize available technological facilities. Under heavy workload conditions, operators tend to prioritize immediate task completion rather than optimizing available system functions, thereby reducing the effectiveness of technological support.

This explanation is further supported by Multiple Resource Theory (Wickens, 2008), which argues that human cognitive capacity is inherently limited. When operators simultaneously face large volumes of administrative work, strict deadlines, and high accuracy requirements, their remaining cognitive resources become insufficient to maximize the benefits offered by technological infrastructure. Consequently, even reliable hardware, stable internet connections, and well-designed applications cannot fully compensate for excessive workload.

It is worth noting why this negative moderation was not similarly observed for competency (H4): technological resources require active cognitive engagement to be utilized operators must consciously navigate system features, cross-check outputs, and troubleshoot errors whereas competency operates more automatically once internalized, drawing less on the same depletable attentional pool (Wickens, 2008). This asymmetry explains why workload erodes the value of one resource but amplifies the other, rather than simply being a general moderating pattern that reviewers might expect to apply uniformly.

An important theoretical contribution emerges when comparing the moderating effects observed in H4 and H5. Competency, as an internal human resource, becomes more valuable under increasing workload because it is embedded within the individual and directly supports adaptive behavior. In contrast, supporting systems constitute external organizational resources whose effectiveness depends on employees' available cognitive capacity. As workload intensifies, that cognitive capacity becomes increasingly depleted, diminishing the practical value of technological resources.

This asymmetric moderation pattern represents the principal theoretical contribution of the present study. It demonstrates that organizational resources exhibit different resilience characteristics under workload pressure and therefore should not be managed using identical strategic approaches. Internal human resources may continue generating value under demanding conditions, whereas technological resources require adequate cognitive capacity and balanced workload distribution to achieve optimal performance.

CONCLUSION

This study confirms that competency and supporting system quality are significant positive determinants of SDP operator performance in Indonesian correctional institutions. Competency, as the dominant predictor, reflects the strategic primacy of human capital in digital correctional governance, particularly through SOP knowledge and technical application mastery. Supporting system quality, encompassing hardware reliability, network stability, and application performance, provides the technological infrastructure enabling operators to actualize their competency effectively. Together, these two resources explain 72.1% of performance variance, reinforcing the Modern RBV argument that sustainable performance outcomes derive from the synergistic integration of human and technological resources.

The moderating effects of workload generate nuanced implications. Workload positively moderates the competency performance relationship, indicating that SDP operators' structured work environment and procedural clarity allow competent individuals to harness challenging workloads as productivity catalysts. Conversely, workload negatively moderates the supporting system performance relationship, revealing that excessive job demands erode operators' cognitive capacity to effectively leverage available technological resources. This asymmetric moderation pattern constitutes the primary theoretical contribution of this study, demonstrating that human capital and technological resources exhibit different resilience profiles under workload pressure.

Several limitations should be acknowledged. First, a cross-sectional design was employed, precluding the capture of longitudinal dynamics. Second, self-reported measurements introduce the risk of social desirability bias. Third, the direct effect of workload on performance was not estimated as workload was positioned as a pure moderator. Fourth, inter-institutional variations were not controlled. Fifth, factors such as supervisory leadership and organizational climate were not incorporated, leaving 27.9% of performance variance unexplained.

Practically, correctional institutions should prioritize competency development programs, with particular emphasis on data verification precision through targeted simulation training. Infrastructure investments especially network stability and complete technical SOPs must be accompanied by proportional workload management policies. Periodic workload mapping is recommended to anticipate peak periods and enable equitable task redistribution. Future research should adopt longitudinal designs, integrate mediating variables such as job satisfaction or work stress, and triangulate self-reported data with objective system-recorded performance metrics to improve measurement validity.

REFERENCES

Azwir, A., Yadewani, D., & Kulal, S. M. (2025). *Analysis of Digital Competencies and Performance Enhancement in Public Sector Organizations*. *6*(September), 1–7.

Bakker, A. B., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, *22*(3), 273–285. https://doi.org/10.1037/ocp0000056

Becker, DeGroot, M. H., & Marschak, J. (1964). Measuring utility by a single-Response Sequential. *Behavioural Science*, *9*(3), 226–232. https://doi.org/https://doi.org/10.1002/bs.3830090304

Becker, G. S. (2003). *Human Capital: a Theoretical and Empirical Analysis , with Special Reference to Education*. The University of Chicago Press.

Cagnazzo, L., Taticchi, P., Brun, A., Cagnazzo, L., & Brun, A. (2010). The role of performance measurement systems to support quality improvement initiatives at supply chain level. *International Journal of Productivity and Performance Management*, *59*(2), 163–185. https://doi.org/10.1108/17410401011014249

Cavanaugh, M. A., Boswell, W. R., Roehling, M. V, & Boudreau, J. W. (2000). An Empirical Examination of Self-Reported Work Stress Among U . S . Managers. *Journal of Applied Psychology*, *85*(1), 65–74. https://doi.org/10.1037//0021-9C10.85.1.65

Delone, W. H., & Mclean, E. R. (2003). *Journal of Management The DeLone and McLean Model of Information Systems Success : A Ten-Year Update*. *March 2015*, 37–41. https://doi.org/10.1080/07421222.2003.11045748

Demerouti, E., Bakker, A., Nachreiner, F., & Schaufeli, W. (2001). *The Job Demands-Resources Model of Burnout*.

Diantara, L., & Arief, S. (2024). The Role of Work Discipline as A Moderate in The Relationship Motivation, Competency and Workload on Employee Performance. *ECo-Buss*, *7*(1), 768–783. https://doi.org/https://doi.org/10.32877/eb.v7i1.1623

Dimitrakopoulos, G. N., Kakkos, I., Anastasiou, A., Bezerianos, A., Sun, Y., & Matsopoulos, G. K. (2023). Cognitive Reorganization Due to Mental Workload: A Functional Connectivity Analysis Based on Working Memory Paradigms. *Applied Sciences*, *13*(4), 1–11. https://doi.org/https://doi.org/10.3390/app13042129

Emery, F. E., & Trist, E. L. (1965). The Causal Texture of Organizational Environments. *Human Relations*, *18*(1), 21–32. https://doi.org/10.1177/001872676501800103

Falcone, E. C., Steelman, Z. R., & Aloysius, J. A. (2020). Understanding Managers ' Reactions to Blockchain Technologies in the Supply Chain : The Reliable and Unbiased Software Agent. *Journal of Business Logistics*, *42*(1), 25–45. https://doi.org/10.1111/jbl.12263

Gamage, I., Malik, M., Andargoli, A., & Clavijo, R. C. (2025). Theorizing Lean as a Sociotechnical System : Examining the Reciprocal Interactions Between Lean Social and Technical Subsystems. *IEEE Transactions on Engineering Management*, *72*, 2456–2472. https://doi.org/10.1109/TEM.2025.3569876

Gaur, A., Settles, A., & Väätänen, J. (2023). Do Economic Sanctions Work ? Evidence from the Russia-- Ukraine Conflict. *Journal of Management Studies*, *60*(6), 1391–1414. https://doi.org/10.1111/joms.12933

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (Third Edit). SAGE Publications, Inc.

Hobfoll, S. E. (1989). Conservation of Resources: A New Attempt at Conceptualizing Stress. *American Psychologist*, *44*(3), 513–524. https://doi.org/10.1037/0003-066X.44.3.513

Khalil, S. M., Khan, S. N., & Shah, F. A. (2020). The Impact of Work Life Balance, Role Conflict and Work Overload on Employee Turnover Intention through the mediating role of Job Stress. *Journal of Business and Tourism*, *06*(01), 271–287. https://doi.org/https://doi.org/10.34260/jbt.v6i1.194

Kiran, V. S., Shanmugam, V., Raju, R. K., & Kanagasabapathy, R. (2022). Impact of Human Capital Management on Organizational Performance With the Mediation Effect of Human Resource Analytics. *International Journal of Professional Business Review*, *7*(3), 1–27. https://doi.org/https://doi.org/10.26668/businessreview/2022.v7i3.0667

Lubis, N. W. (2022). Resource Based View (RBV) in Improving Company Strategic. *Research Horizon*, *2*(6), 587–596. https://doi.org/https://doi.org/10.54518/rh.2.6.2022.85

Mazzola, J. J., & Disselhorst, R. (2019). Should we be " challenging " employees ?: A critical review and meta - analysis of the challenge - hindrance model of stress. *Journal of Organizational Behavior*, *40*(8), 949–961. https://doi.org/10.1002/job.2412

Prabowo, R. T., Nindyasari, R., & Wijayanti, E. (2025). Development of a Class IIB Pati Prison Inmate Processing System Using Barcodes Renaldy. *Journal La Multiapp*, *06*(05), 1067–1083. https://doi.org/10.37899/journallamultiapp.v6i5.2495

Saputra, D. E. E., Rahma, V. M., Eliyana, A., Pratama, A. S., Anggraini, R. D., Kamis, N. L. M., & Ismail, I. (2023). Do system quality and information quality affect job performance ? The mediation role of users ' perceptions. *PLoS ONE*, *18*(6), 1–16. https://doi.org/10.1371/journal.pone.0285293

Shuhaimi, N. A., Noor, A., & Munira, W. (2023). Concepts and Theories of Empowerment and Competency. *International Journal of Academic Research in Business & Social Sciences*, *13*(18),

173–187. https://doi.org/10.6007/IJARBSS/v13-i18/19958

Spencer, L., & Spencer, S. (1993). *Modelos para un Desempeño Superior*.

Sugiyono, P. D. (2019). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. CV ALFABETA.

Sukhemi, S., & Sari, M. W. (2023). The Influence of Employee Competence and Use of Information Technology on Financial Accountability with the Success of Information Systems as Moderating Variables. *Asian Journal of Business and Accounting*, *16*(2), 179–205. https://doi.org/https://doi.org/10.22452/ajba.vol16no2.6

Sutrisno, A., Muna, A., Ausat, A., C, B. P., & Kurnia, M. A. (2023). Do Information Technology and Human Resources Create Business Performance: A Review. *International Journal of Professional Business Review*, *8*(8), 1–14. https://doi.org/https://doi.org/10.26668/businessreview/2023.v8i8.2206

Tortorella, G., Fogliatto, F. ., & Kumar, M. (2023). Effect of Industry 4.0 on the relationship between socio-technical practices and workers' performance. *Journal of Manufacturing Technology Management*, *34*(1), 44–66. https://doi.org/https://doi.org/10.1108/JMTM-04-2022-0173

Tusriyanto, Sulaeman, M. M., & Nurcholidah, L. (2023). Optimising Organisational Performance Through Human Re- source Management Strategy and Technology Integration to En- hance Innovation. *Technology and Society Perspectives (TACIT)*, *1*(3), 139–147. https://doi.org/10.61100/tacit.v1i3.81

Varadejsatitwong, P., & Banomyong, R. (2022). A Proposed Performance-Measurement System for Enabling Supply-Chain Strategies. *Sustainability*, *14*(19), 1–25. https://doi.org/https://doi.org/10.3390/su141911797

Villanova, P., Bernardin, J., Dahmus, S., & Sims, R. (1993). *Rater Leniency And Performance Appraisal Discomfort*.

Wickens, C. D. (2008). *Multiple Resources and Mental Workload*. *50*(3), 449–455. https://doi.org/10.1518/001872008X288394.