

DOI: <https://doi.org/10.38035/gijlss.v4i4><https://creativecommons.org/licenses/by/4.0/>

Received: 20 April 2026 | Revised: 23 April 2026 | Accepted: 29 September 2026

The Influence of Digital Workload, Role Ambiguity, and Digital Skill Gap on Technostress in HR Context among Digital Startup Employees

Dominica Dini Afiat^{1*}, Sonya Sidjabat², Ade Suhara³, Susatyo Adhi Pramono⁴,
Tanti Widia Nurdiani⁵

¹STIE Bhakti Pembangunan, Jakarta Selatan, Indonesia, dominicadiniafiat@gmail.com

²Institut Transportasi dan Logistik Trisakti, Jakarta Timur, Indonesia, sonyasidjabat@gmail.com

³Universitas Buana Perjuangan Karawang, Jawa Barat, Indonesia, ade.suhara@ubpkarawang.ac.id

⁴Universitas Wijayakusuma Purwokerto, Jawa Tengah, Indonesia, susatyoadhipramono@gmail.com

⁵Universitas Islam Raden Rahmat Malang, Jawa Timur, Indonesia, tanti_widia@uniramalang.ac.id

*Corresponding Author: dominicadiniafiat@gmail.com¹

Abstract: The research investigates how digital workload, role ambiguity and digital skill gap together create technostress for employees who work in human resources at digital startup companies. The research used a quantitative approach which collected data through questionnaires that 120 participants completed after being chosen through purposive sampling. The researchers performed data analysis through multiple linear regression. The research results showed that digital workload combined with role ambiguity and digital skill gap created a direct relationship which produced strong effects on technostress. Digital workload which uses advanced technology increases work pressure while role ambiguity creates role ambiguity which intensifies work stress and digital skill gaps lead to work difficulties because employees cannot adapt to workplace technology. Three variables explain technostress variations through their combined effects which occur at the same time. The research shows organizations how to handle digital workload, define employee roles and develop digital skills to reduce technostress effects.

Keywords: Digital Workload, Role Ambiguity, Digital Skill Gap, Technostress, Startup Digital.

INTRODUCTION

The development of digital technology has resulted in fundamental transformations of work methods used by organizations which function as digital startups that depend on technological systems to run their operational activities (Wibowo et al., 2023). Employees need to develop skills for using new digital platforms together with work applications and information systems which keep changing throughout their workplace environment. The situation has resulted in the creation of technostress which describes the work-related stress that people experience when they use technology (Mahrani et al., 2024). The human resource

management field encounters its most significant problem from technostress because this condition impacts both employee productivity and their ability to work and their mental well-being (Nugraha et al., 2025). Digital startups create work environments which force their employees to experience work-related stress as they try to complete multiple technology tasks while their work requirements keep changing. Employees experience higher stress levels because they use technology excessively while failing to manage their work responsibilities effectively (Malini et al., 2024). Organizations need to study the factors that create technostress in human resources because this knowledge helps develop effective methods to protect employee productivity and mental health in the digital workplace (Rembulan et al., 2023).

Digital workload functions as the primary element that determines how digital startup workers experience technostress (Sjarifudin et al., 2024). Digital workload describes work requirements which emerge when users operate various digital systems that comprise email software and collaboration tools and project management applications and cloud services which demand immediate user response and continuous peak performance (Ekasari et al., 2024). Employees at workplaces need to use more mental energy when they operate technology to complete their job responsibilities. Workers face mental fatigue because of their work responsibilities which hinder them from setting work priorities while they need to be present at work and handle professional communication (Schmidt et al., 2014). The startup environment requires rapid work completion which results in increasing digital workloads that surpass the demands of organizations. Employees need enough time to recover their mental well-being because work circumstances provide insufficient recovery time which results in technostress. Digital workload research needs to be studied because it shows how technology-driven work requirements affect workers mental health (Wang & Hsu, 2014).

The employees of digital startups face technostress because their work requires them to complete digital tasks and their job responsibilities remain unclear. Employees experience role ambiguity when their work requirements and responsibilities remain undefined (Bayu et al., 2026). Employees in startup organizations which use flexible work structures face multiple job responsibilities because their work requirements remain unknown. The situation creates three problems which include difficulty in establishing work priorities and simultaneous role conflicts and decision-making doubts (Syafri et al., 2025). Workers face additional stress because they must operate digital systems while handling technology-related work tasks which lack proper training support. Workers who lack control over their workplace environment experience increased technostress because their power to manage tasks remains insufficient (Bisri et al., 2025). The research shows that role ambiguity creates technostress problems for digital workers who work in modern digital office environments (Suhara, 2025).

The second critical factor of digital skills gap measurement exists because employees need specific digital skills which differ from what their work environment demands. Digital startups need to train their staff in new skills because new technologies continue to appear throughout their business operations (Djunaedi et al., 2025). The workforce shows different levels of digital readiness which creates a skills gap that results in problems when employees try to use specific systems or applications. People who lack the ability to use technology properly experience three negative outcomes which include workplace frustration and anxiety and decreased confidence in their performance (Hilman et al., 2022). Employees who experience this condition believe that their technology-related job requirements exceed their capabilities which creates a major reason for their technostress. The situation becomes worse because employees lack both training opportunities and organizational support to improve their digital skills (Setyawati et al., 2024). The digital skills gap serves as a researchable

factor which connects to technostress effects that digital startup employees experience (Sakti et al., 2025).

The research investigates how digital workload and role uncertainty and digital skill deficiency create technostress for employees who work in digital startups. The research establishes theoretical foundations for digital human resources management research through its examination of factors which create technostress in organizations. The study will demonstrate how technological components influence the work patterns of employees in modern office settings. The research findings will help startup managers create effective solutions for digital workload issues which will help them assign employee tasks while developing their digital skills. The organizations will create better work conditions which will reduce technostress and help employees perform better.

METHODS

The study investigates how digital workload and role ambiguity interact with the digital skills gap to create technostress problems for human resource professionals who work at digital startup companies. The research selected a quantitative method because it enables researchers to measure how different variables connect with one another while using statistical methods to test their hypotheses. The research work explains research operations through its explanatory design which establishes connections between independent and dependent variables. The research study included employees who worked at digital startup companies as its research population. The research team used purposive sampling method to select respondents who fulfilled the research requirements that the team established to attain their study objectives. The study required three criteria to determine study participants which included employees who work with digital systems employees who have worked for at least one year to gain sufficient experience in a digital work environment and employees involved in technology-based work activities or digital work processes. The research study established a sample size of 120 respondents which researchers considered adequate for conducting multiple linear regression analysis.

The research team used an online survey system to gather data through a structured questionnaire. The research instrument used a Likert scale which provided five answer options that ranged from 1 to 5 with 1 indicating strong disagreement and 5 indicating strong agreement. The study measured digital workload through three specific indicators which included technology usage intensity and digital task load and responsiveness requirements. The research assessed role ambiguity through three aspects which included role clarity and responsibilities and work expectations. The digital skill gap variable was measured using indicators which showed the difference between digital skills that people had and the requirements of their jobs. The research study evaluated technostress through three different measurement indicators which included anxiety and mental fatigue and difficulties with technology adaptation.

The researchers employed validity and reliability assessments to evaluate their research instrument's quality. The researchers used the t-test to evaluate the relationship between individual item scores and complete test scores during their validity testing. The researchers established item validity through their discovery of significant values which dropped below 0.05 threshold. The researchers used Cronbach's Alpha to conduct reliability testing which confirmed that the research instrument maintained its reliability and consistency at alpha value above 0.70. The researchers conducted classical assumption testing through three tests which included a normality test for normal data distribution and a heteroscedasticity test to check residual variance patterns and a multicollinearity test to verify that independent variable pairs did not show strong correlation. The tests serve as essential components which verify that the regression model properly follows fundamental analytical requirements. The

research used multiple linear regression analysis to examine how digital workload and role ambiguity and digital skill gap interacted with technostress. The researchers used regression coefficient metrics together with significance testing results to assess the research hypotheses.

RESULTS AND DISCUSSION

Data Quality Test and Multilinear Regression

The testing of research instruments produced results which showed all statement items that assess digital workload and role ambiguity and digital skill gap and technostress have a significance value which stays below 0.05. The results demonstrate that all questionnaire indicators successfully measure the targeted construct. The reliability test through Cronbach Alpha showed all variables maintained values which exceeded 0.70. The research instrument achieved a reliable internal consistency standard according to this finding. The classic assumption test results show that the regression model used in the study successfully fulfills all required statistical criteria. The normality test results demonstrate that the data follows a normal distribution pattern because the test shows a significance value which exceeds 0.05. The heteroscedasticity test results show no signs of heteroscedasticity because the model maintains constant residual variance with no deviations. The multicollinearity test results showed that all independent variables kept their tolerance values above 0.10. The Variance Inflation Factor (VIF) stayed under 10. The multiple linear regression analysis results showed that digital workload and role ambiguity combined with the digital skill gap created a significant impact on technostress because their significance value reached below 0.05. The coefficient of determination (R^2) showed that the research model successfully explained technostress variation to a strong extent because all three independent variables contributed to explaining technostress among digital startup employees.

The Effect of Digital Workload on Technostress

The results indicated that digital workload established a strong positive relationship which created technostress for employees working in digital startup businesses. The study results demonstrate that higher technology-based work demands will result in greater work-related stress for employees. Digital startups currently use multiple technology platforms which include instant communication applications and project management systems and analytical dashboards and various cloud-based tools as essential components of their daily work procedures. The organization requires its employees to develop outstanding multitasking skills because their job responsibilities involve managing different tasks at the same time. The situation requires employees to handle high cognitive demands because they must evaluate extensive data within brief time limits. The need for constant connectivity creates an environment where work and personal time become indistinguishable. The condition can cause chronic mental exhaustion which leads to diminished stress handling capacity. Employees experience psychological distress when they face high digital workloads because they believe they lack sufficient time to accomplish their work responsibilities. The organization will experience reduced efficiency and increased errors and lower employee satisfaction with their work performance over time. The findings establish that organizations must control digital workloads to protect employee health and decrease technostress in their digital work environments.

The Effect of Role Ambiguity on Technostress

The research results show that role ambiguity exists in digital startup organizations which leads to essential technostress which affects their employees. The study shows that when employees experience role uncertainty their technology-related stress levels increase. Digital startup organizations encounter operational challenges because their employees

cannot understand their assigned responsibilities which leads to problems in their business operations. The organization needs employees who will execute their designated functions while performing extra duties which the organization requires. The existence of this ambiguity creates challenges for establishing work priorities while increasing the likelihood of role conflict. Employees experience increased stress levels because they depend on technology which establishes this situation in their workplace. Employees need to learn how to use digital systems because their job responsibilities do not include specific tasks. Employees who face this situation will experience uncertainty and anxiety while losing their ability to control work activities. The organization experiences role ambiguity which obstructs its communication process thus creating more difficulties for employees to work together across teams. The presence of role ambiguity in technology applications leads to decision-making mistakes and generates additional unstructured tasks. The research findings demonstrate that role clarity functions as an essential element which decreases technostress in digital organizations that experience high work activity.

The Effect of Digital Skill Gap on Technostress

The research demonstrates that digital skills deficiency leads to severe technostress issues which impact employees at digital startups. The research shows that employees with insufficient digital skills create work-related stress because their digital skills do not meet the technological requirements of their work. Digital startups use new technologies as a solution to boost their operational performance and market position because their industry needs them to embrace continuous technological progress. The organization does not have complete readiness to implement these changes which requires new technologies. Basic digital skill employees struggle to use current systems which leads to their mental distress and frustration. The organization needs to equip its employees with proper training and technical support to improve their work performance. Employees who lack digital skills experience decreased work performance because they believe their abilities do not match those of their coworkers. Individual work performance decreases which leads to reduced productivity for the entire team. The digital skills gap causes organizations to rely heavily on specific skilled workers which results in unequal distribution of work tasks between employees. The research results show that training employees through digital skills development programs helps decrease technostress while building organizational capacity to handle digital transformation processes.

CONCLUSION

The research results show that three factors which are digital workload, role ambiguity and the digital skill gap create a strong impact on technostress which affects employees who work in digital startups. The research demonstrates that digital workload increases cognitive stress and work demands on employees because they use technology at high levels which results in mental exhaustion and decreased psychological health. The study shows that role ambiguity creates a main pathway which increases technostress because dynamic startup organizations lack clear definition of employee tasks and responsibilities. The situation becomes more challenging when employees use technology at work. The research shows that digital skill gaps create a major impact on technostress because employees who lack necessary digital skills face difficulties in completing work which results in work-related frustration and decreased self-confidence. The three variables work together to explain how technostress levels between different groups of people who studied the research. The study identifies digital workload management and role clarity and digital competency development as essential elements which decrease technostress and boost employee productivity in digital startup workplaces.

The research findings deliver multiple recommendations which researchers can apply in both practical settings and academic environments. Digital startups should manage their digital operations through two main methods which involve controlling all technology work while their staff members operate during designated work hours. Organizations need to create dedicated job descriptions that will help employees understand their work duties while staff members can share information with each other. Companies need to establish digital training programs which include workshops and technology mentoring to help employees develop essential digital skills. The research model requires additional variables to be included for proper academic research expansion which includes organizational support and digital leadership and work-life balance. The research results become more understandable through the use of SEM together with other advanced analytical methods. The research findings require industrial sector research to assess their applicability in different contexts.

REFERENCES

- Bayu, M., Kusumawati, B., Azhari, R., Elizabeth, R., & Suhara, A. (2026). The Role of Human Resource Analytics in Enhancing Evidence-Based Decision Making in Modern Organizations. *Jurnal Ilmiah Manajemen Kesatuan*, 14(1), 1319-1330.
- Bisri, T. S., Suhara, A., Azhari, M., Yuliastuti, H., Mayasari, N., & Sastraatmadja, A. H. M. (2025). THE EVOLUTION OF SUSTAINABLE HUMAN RESOURCE MANAGEMENT RESEARCH: A BIBLIOMETRIC REVIEW. *Media Bina Ilmiah*, 20(2), 7481-7490.
- Djunaedi, D., Hendratni, T. W., Ahmad, A., Haribowo, R., Sidjabat, S., & Apramilda, R. (2025). The Influence of Knowledge Sharing, Organizational Agility, and IT Governance on the Digital Innovation Capability of E-Commerce Companies. *Journal of Information System, Technology and Engineering*, 3(4), 553-558.
- Ekasari, S., Haji, W. H., Ishak, O., Nurdiani, T. W., & Wulansari, M. (2024). Effect of Emotional Intelligence on Employee Performance in Gen Z. *International Journal Of Education, Social Studies, And Management (IJESSM)*, 4(2), 812-818.
- Hilman, C., Mon, M. D., Sidjabat, S., Simarmata, N., Rais, R., & Nugroho, J. W. (2022). *Perencanaan Dan Pengembangan SDM*. Global Eksekutif Teknologi.
- Mahrani, S. W., Nurdiani, T. W., Pramono, S. A., Aulia, M. R., & Apramilda, R. (2024). Driving Employee Performance in Agribusiness: The Role of Technology Adoption, Emotional Intelligence, and Digital Competence. *Jambura Agribusiness Journal*, 6(1), 51-61.
- MALINI, L. F., HEGY, S. A., Assery, S., Lahuddin, A. H., & Nurdiani, T. W. (2024). Analysis of the interrelationship between employee's digital skills, digitalization in human resource management and organizational performance. *INTERNATIONAL JOURNAL OF ENGINEERING, SCIENCE*, 4(3), 60-65.
- Nugraha, J. P., Nurdiani, T. W., Abubakar, F., Kamaluddin, S., Suntoro, B., & Violin, V. (2025). Analysis Of the Effect of Work Process Digitalization, Employee Experience, and Ethical Leadership on Employee Performance in Technology Start-Up Companies. *Journal of Information System, Technology and Engineering*, 3(2), 433-438.
- Rembulan, G. D., Fitri, E. R., Nurdiani, T. W., Sudadi, S., & Kusumastuti, R. (2023). The Influence of Reward Systems, Decentralization and Implementation of TQM on Managerial Performance of Schools Leaders.
- Sakti, R. F. J., Sidjabat, S., Sundari, P., Subagio, M., & Prasidi, A. (2025). Identifying the Characteristic Delegation of Leadership: Study Literature Review. *Greenation International Journal of Tourism and Management*, 3(1), 34-46.

- Schmidt, S., Roesler, U., Kusserow, T., & Rau, R. (2014). Uncertainty in the workplace: examining role ambiguity and role conflict, and their link to depression—a meta-analysis. *European journal of work and organizational psychology*, 23(1), 91-106.
- Setyawati, A., Soekirman, A., Triana, N., Suhendra, A., Pratikno, Y., Aviyanti, C., ... & Sidjabat, S. (2024). Pengantar Ilmu Manajemen: Teori dan Praktik Bisnis Berkelanjutan. *Purbalingga: Eureka Media Aksara*.
- Sjarifudin, D., Wahdiniawati, S. A., Untari, D., Sidjabat, S., & Basuki, C. (2024). Training Mediated by Organizational Culture and Moderated by Organizational Commitment and Leadership as Control Variables. *Dinasti International Journal of Digital Business Management (DIJDBM)*, 5(2).
- Suhara, A. (2025). Human capital strategies to address artificial intelligence challenges in the contemporary work environment. *Jurnal Ilmiah Manajemen Kesatuan*, 13(5), 3793-3802.
- Syafri, M., Pramono, D. W., & Suhara, A. (2025). Strategic Talent Management Practices for Enhancing Employee Retention in Competitive Work Environments. *Jurnal Ilmiah Manajemen Kesatuan*, 13(6), 5597-5608.
- Wang, S., & Hsu, I. C. (2014). The effect of role ambiguity on task performance through self-efficacy—a contingency perspective. *IEEE Transactions on Engineering Management*, 61(4), 681-689.
- Wibowo, T. S., Suhendi, D., Suwandana, I. M. A., Nurdiani, T. W., & Lubis, F. M. (2023). The Role Of Transformational Leadership And Organizational Culture In Increasing Employee Commitment. *International Journal of Economics, Business and Accounting Research (IJEBAR)*, 7(2).