

The Influence Of Digital Technology Utilization On Employee Performance Through Work Motivation As A Mediating Variable

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Abstract

Digital transformation in the public sector demands effective technology utilization and human resource readiness. This study investigates the effect of digital technology utilization on the performance of Government Employees with Work Agreements (P3K), with work motivation as a mediating variable. A quantitative approach was employed, using a structured questionnaire distributed to 91 P3K employees in Bulungan Regency, North Kalimantan. Multiple linear regression and mediation analysis were conducted to examine variable relationships. The findings indicate that digital technology utilization has a positive and significant effect on P3K performance ($\beta = 0.068$; $p < 0.001$). Work motivation also significantly affects performance ($\beta = 0.074$; $p < 0.001$) and mediates the relationship between technology and performance ($\beta = 0.002$; $p < 0.001$). The results suggest that while digital tools enhance work efficiency, their impact is optimized when employees are highly motivated. Thus, work motivation serves as a crucial factor in the successful implementation of technology. The influence of digital technology on performance is both direct and mediated by work motivation. Digital transformation policies must incorporate motivational strategies to achieve optimal employee performance.

Keywords: Digital technology, Work Motivation, Performance, P3K, Mediation

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PENDAHULUAN

The rapid advancement of digital technology has brought transformative changes to work systems across both private and public sectors. In the era of the Fourth Industrial Revolution (Industry 4.0), digitalization is not merely a trend but a necessity for improving efficiency, transparency, and accountability in public governance. In Indonesia, the government promotes digital transformation through the Electronic-Based Government System (SPBE), aiming to build a more responsive and modern bureaucracy (Claudi & Hadiani, 2024). However, the successful implementation of digital technology in public institutions depends heavily on human resource readiness particularly Government Employees with Work Agreements (P3K). These employees, though assigned roles equivalent to those of permanent civil servants, operate under fixed-term contracts and face limitations in career development opportunities. Despite these constraints, P3K employees are expected to contribute significantly to public service delivery and administrative functions.

Digital technology has the potential to enhance the performance of P3K employees by increasing work efficiency, simplifying administrative processes, and improving communication (Haratua et al., 2025). However, the effectiveness of digital systems is not determined solely by their technical sophistication (Yang et al., 2025a). The human factor especially employee motivation plays a central role in determining whether technology translates into actual performance improvements.

Work motivation acts as a critical mediating factor in the relationship between digital technology utilization and employee performance (Purwati et al., 2025). As highlighted by Robbins and Judge, motivation drives the intensity, direction, and persistence of behavior at work. Even the most advanced digital tools can fail to deliver results if employees lack the internal drive to use them effectively. Therefore, motivation should not be overlooked when assessing the impact of digitalization on public service performance.

Several studies have shown that digitalization can improve employee performance when supported by strong motivation. For example (Samuel & Haeba Ramli, 2024) found that digital work environments foster intrinsic motivation, which positively impacts work outcomes. Similarly (Choirinisa, 2022) emphasized that regional governments achieve better results from digitalization when employees are personally motivated and committed. (Angga Wahyudi et al., 2023) further argue that motivation strengthens or weakens the influence of digitalization, workload, and competence on performance. In the P3K context, if employees believe that using digital tools will make their work easier and lead to recognition, bonuses, or career development, they will be more motivated to use such tools effectively. The clearer the link between effort, performance, and reward, the stronger the motivational drive.

The setting of this study is Tanjung Selor, North Kalimantan, a remote region facing challenges such as uneven digital infrastructure, limited training access, and varying levels of digital competence among employees. These contextual factors make P3K employees in this region a particularly relevant subject for investigating the complex interplay between technology, motivation, and performance. In such environments, the presence or absence of motivation can determine whether digital tools serve as performance enhancers or additional stressors.

Digital technology in public institutions includes a wide range of tools such as online attendance systems, e-office platforms, HR information systems, and performance tracking applications. These tools can increase accuracy, transparency, and timeliness in administrative processes (Yang et al., 2025b). However, successful adoption requires user acceptance and digital skills. Davis's Technology Acceptance Model (TAM) explains that employees are more likely to embrace technology if they perceive it as useful and easy to use. Furthermore, it shows that training programs and managerial support significantly influence the willingness of public employees to adopt and consistently use digital systems (Wider et al., 2025).

In this study, employee performance refers to the ability of P3K staff to carry out tasks effectively and contribute to institutional goals. Performance is influenced by various factors including competence, digital literacy, motivation, and organizational support. According to performance results from a combination of ability, motivation, and opportunity. Digital tools represent an opportunity that can expand capacity, but motivation remains the internal engine driving employees to use that opportunity optimally. In conclusion, this study aims to analyze the impact of digital technology utilization on P3K employee performance, focusing on work motivation as a mediating variable. The findings are expected to contribute theoretically to the field of digital-era public sector human resource management, while offering practical recommendations for policy-makers. These include designing motivation-enhancing interventions such as performance incentives, recognition systems, and targeted digital skills training. Ultimately, the study seeks to support more inclusive and adaptive staffing policies that reflect the realities of underdeveloped regions like Tanjung Selor, thereby promoting equitable development in Indonesia's public service sector.

METHOD, DATA, AND ANALYSIS

This study employed a quantitative approach, as it aimed to objectively and measurably examine the relationships among variables using numerical data. The research design used was causal associative research, intended to determine the extent to which digital technology utilization influences job satisfaction and performance among Government Employees with Work Agreements (P3K) in Tanjung Selor. The study received ethical clearance from the appropriate ethics committee, and all participants provided written informed consent before participating in the survey. The

researcher ensured that all information collected remained anonymous, confidential, and used solely for academic purposes. Data collection and storage procedures were conducted in accordance with social research ethics principles and data security standards.

The population of this study consisted of all active P3K employees assigned to the Bulungan Regency. Based on data from the Regional Civil Service Agency (BKD) of Bulungan in 2024, the total number of active P3K employees exceeded 1,000 individuals across various institutions and work units. This population was considered relevant because the study aimed to explore the influence of digitalization, competence, and workload on P3K performance, with work motivation serving as the mediating variable. The minimum sample size used in this study was 91 respondents. However, to enhance data reliability and anticipate potential non-response, the number of distributed questionnaires was increased to 100 respondents.

The data collection in this study was conducted using two approaches: questionnaires and documentation. The data were gathered through Google Forms (G-Form) which were distributed directly to respondents. Data collection took place from March to May 2025, through the direct distribution of questionnaires to active P3K employees stationed in Tanjung Selor. During this period, no modifications were made to the data collection procedures, as the research instruments and methodology had undergone prior pilot testing and were adjusted to the field context before the data collection phase began. Therefore, all data were collected using consistent methods without significant alterations to the original procedures.

To support data validity, documentation was also carried out in the form of field notes and limited visual documentation (e.g., photographs of questionnaire distribution activities). Audio or video recording tools were not used, as the entire process was conducted manually and did not involve interviews. Throughout the study, no changes were made to the instruments used. The questionnaire had been previously tested for validity and reliability, and all respondents received the same version of the instrument. This ensured data consistency and enabled accurate and standardized quantitative analysis. The questionnaire was designed using a five-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree," to measure levels of digital technology utilization, job satisfaction, and P3K employee performance. The questionnaire items were developed based on relevant theories and had been validated in previous studies. The questionnaires were distributed directly to P3K respondents working within government institutions in Tanjung Selor. Additionally, documentation was used as a complementary technique to obtain secondary data such as the number of employees, organizational structure, and policies or regulations related to digital technology implementation at the institutions under study.

RESULT AND DISCUSSION

Table 1. Results of Classical Assumption Testing

Classical Assumption	Test	Value Characteristics	Criteria	Research Result
Normality	Kolmogorov-Smirnov	Sig. = 0,200	Sig. > 0,05	Assumption Met
No Multicollinearity	<i>Variance Inflation Factor</i>	VIF X_1 = 1,705 VIF M = 1,705	VIF < 10	Assumption Met
No Heteroscedasticity	Rank Spearman	Sig. X_1 = 0,230 Sig. X_2 = 0,849	Sig. > 0,05	Assumption Met

Table 1 presents the results of the normality test using the Kolmogorov-Smirnov method. The result shows a significance value (Sig.) of 0.200, which is greater than the threshold value of 0.05. This indicates that the residual data are normally distributed, and thus the assumption of normality is fulfilled. The non-multicollinearity test was conducted to determine whether there is a high linear

correlation between the independent variables. The Variance Inflation Factor (VIF) results show that the VIF values for variables X1 and M are both 1.705, which is well below the commonly accepted threshold of 10. Therefore, no indication of multicollinearity was found, and this assumption is considered met. The non-heteroscedasticity test was carried out using the Spearman Rank test. The significance values for variable X1 (0.230) and variable M (0.849) are both greater than 0.05. This indicates that the model does not suffer from heteroscedasticity, meaning the assumption of constant variance (homoscedasticity) is satisfied.

Table 2. Results of Multiple Linear Regression Analysis

		Coef.	Std. Error	t	Sig.
<i>a</i>	(Constant)	1.221		-.630	.530
β_1	Digital Technology	.068	.291	5.090	.000
<i>Z</i>	Work Motivation	.074	.697	12.193	.000

Table 2 shows that the digital technology variable has a regression coefficient of 0.068, with a t-value of 5.090 and a significance level (Sig.) of 0.000. This significance value is less than 0.05, indicating that digital technology utilization has a statistically significant effect on employee performance. In other words, the higher the level of digital technology use, the higher the performance of P3K employees. Meanwhile, the work motivation variable has a regression coefficient of 0.074, a t-value of 12.193, and a significance level of 0.000. This value is also below 0.05, which means that work motivation significantly influences employee performance. Thus, work motivation plays an essential role in driving individual performance improvement in a digital work environment. The constant (intercept) value is 1.221, with a t-value of -0.630 and a significance level of 0.530, indicating that the constant is not statistically significant. However, the independent variables examined in this model still contribute significantly to the dependent variable.

Table 3. Results of Mediation Analysis

		Coef.	Std. Error	t	Sig.
<i>a</i>	(Constant)	1.221		-.630	.530
β_1	Digital Technology	.068	.291	5.090	.000
<i>Z</i>	Work Motivation	.074	.697	12.193	.000
X1.Z	Digital Technology and P3K Performance	.002	.889	18.328	.000

Table 3 presents the results of the mediation analysis to examine the role of work motivation in mediating the influence of digital technology utilization on P3K employee performance. The regression analysis shows that the digital technology variable has a regression coefficient of 0.068, a t-value of 5.090, and a significance level of 0.000. This indicates that digital technology has a significant direct effect on employee performance. Furthermore, the work motivation variable has a coefficient of 0.074, a t-value of 12.193, and a significance level of 0.000, confirming that work motivation also significantly influences performance improvement. Most importantly, the interaction between digital technology and work motivation on P3K performance (X1.Z) yields a regression coefficient of 0.002, with a t-value of 18.328 and a significance level of 0.000. The positive coefficient and highly significant value indicate that work motivation significantly mediates the relationship between digital technology utilization and employee performance.

This study reveals that work motivation significantly influences the performance of Government Employees with Work Agreements (P3K). Employees who exhibit higher levels of

motivation tend to perform better in terms of productivity, quality, and accountability. These findings align with Vroom's Expectancy Theory, which explains that individuals are more motivated when they believe their efforts will result in valued outcomes. In the P3K context – where contract-based employment and limited career advancement are common – motivation becomes a crucial internal factor that drives performance.

Motivated employees demonstrate discipline, responsibility, adaptability, and innovation, especially important in an era of digital transformation. (Huynh Thi Thu et al., 2025) also highlights that work motivation affects three core aspects of performance: quantity, quality, and punctuality. In resource-limited regions like Tanjung Selor, motivation helps maintain productivity despite infrastructure or logistical constraints. This highlights the need for comprehensive strategies, such as transparent reward systems, fair incentives, ongoing training, and supportive leadership to enhance employee motivation.

Digital technology also plays a vital role in improving performance, not only by simplifying tasks but also by influencing psychological aspects such as motivation. (Çini et al., 2023) human resource information systems increase the accuracy and efficiency of task completion. In P3K settings, technology allows performance to be measured more objectively and fairly, reinforcing motivation through transparent evaluations and accountability (Aulia & Lin, 2025). Moreover, tools like scheduling applications and performance dashboards help employees manage time more effectively and plan tasks with greater focus. This structure contributes to better performance and fewer errors. (Yee et al., 2023) explain, access to digital communication tools accelerates information flow, reduces miscommunication, and enables real-time task monitoring, allowing for immediate feedback and corrections (Saputrabey et al., 2025). These benefits help employees feel more competent and in control, further enhancing motivation and performance.

Technology also contributes to performance by fostering adaptability (Kraiwanit & Terdpaopong, 2024). Found that employees trained in digital tools adapt more quickly and perform better. Competence in using technology builds confidence and encourages innovation, improving not only task quantity but also output quality (Suleymanli & Mehdiyev, 2024). Show that digital reporting systems reduce administrative time significantly, allowing more energy to be devoted to core responsibilities. Importantly, this study confirms that work motivation mediates the relationship between digital technology use and employee performance. Effective integration of technology into workflows boosts employee confidence, creates a sense of preparedness, and strengthens intrinsic motivation. This aligns with Hackman and Oldham's Job Characteristics Model, where structured work environments and meaningful tasks lead to increased motivation and better performance outcomes.

The findings emphasize that digital transformation success in public organizations depends not just on the technology itself but also on employees' psychological readiness. For P3K employees who face job insecurity and limited support strategies combining digital systems with motivational support are essential. This study contributes by highlighting motivation as a bridge between technology and performance, offering insights for more human-centered and sustainable public sector innovation.

CONCLUSION AND SUGGESTION

Digital transformation in the public sector requires not only the adoption of technology but also the readiness and motivation of human resources. This study reveals that the utilization of digital technology has a positive and significant effect on the performance of Government Employees with Work Agreements (P3K) in Bulungan Regency. Moreover, work motivation significantly influences performance and serves as a mediating variable between technology use and performance outcomes. These findings suggest that digital tools alone are not sufficient to enhance employee productivity; the presence of strong intrinsic and extrinsic motivation is essential to fully realize the benefits of digital initiatives.

To ensure the success of digital transformation, local governments should develop policies that go beyond technology implementation. There is a need to focus on enhancing employee

motivation through targeted training programs, performance-based incentives, and the creation of a supportive work environment. Additionally, regular assessments of technology adoption and employee feedback should be conducted to inform future strategies. Integrating digital tools with strategies to boost employee motivation will lead to improved performance, fostering a more adaptive, efficient, and citizen-centered bureaucracy. Motivation must be treated as a strategic element in managing technological change to ensure the sustainability and effectiveness of digital reforms in the public sector.

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