

Human Resource Capacity and Village Institutional Resilience: The Moderating Role of Digital Transformation in Jatisari District

Amjad Abdul Majid^{1*}, Uus Mohammad Darul Fadli¹, Ery Rosmawati¹

¹ Management Study Program, Faculty of Economics and Business, Universitas Buana Perjuangan Karawang,, HS Ronggo Waluyo, Teluk Jambe, Karawang 41361 West Java, INDONESIA

*Corresponding Author: mn22.amjadmajid@mhs.ubpkarawang.ac.id

DOI: <https://doi.org/10.30880/rmtb.2026.07.01.083>

Article Info

Received: 31 March 2026

Accepted: 31 May 2026

Available online: 30 June 2026

Keywords

Human Resource Capacity, Digital Transformation, Institutional Resilience

Abstract

This study examines the effect of human resource capacity on village institutional resilience and investigates the moderating role of digital transformation in village governance in Jatisari District. Strengthening institutional resilience is essential as village administrations face increasing demands for adaptability, service quality, and governance effectiveness. A quantitative approach was employed using data collected from 104 village officials through questionnaires. The data were analyzed using Partial Least Squares-Structural Equation Modeling (PLS-SEM). The results indicate that human resource capacity has a positive and significant effect on village institutional resilience, with a path coefficient of 0.669, a T-statistic of 12.498, and a P-value of 0.000. However, digital transformation was not found to moderate the relationship between human resource capacity and institutional resilience, as indicated by an interaction coefficient of -0.016, a T-statistic of 0.489, and a P-value of 0.625. This study contributes to the literature by providing empirical evidence on the role of human resource capacity in strengthening institutional resilience at the village level and by highlighting that digital transformation does not automatically enhance this relationship without adequate organizational readiness and digital governance capacity.

1. Introduction

The village administration holds a crucial position in delivering public services and driving development. As the governmental landscape becomes more intricate and ever-changing, village leaders need to operate with professionalism, adaptability, and a focus on long-term sustainability. This is in line with Law No. 5 of 2014 concerning the State Civil Apparatus, which emphasizes the importance of government officials possessing competence and integrity in carrying out government duties.

The Indonesian government has established digital transformation as a national strategic agenda, implemented through the Electronic-Based Government System policy, which serves as the primary framework for supporting bureaucratic reform. This effort focuses not only on creating digital infrastructure but also on improving the capacity of human resources (HR), a crucial component of bureaucratic reform (Ministry of Communication and Information, 2023).

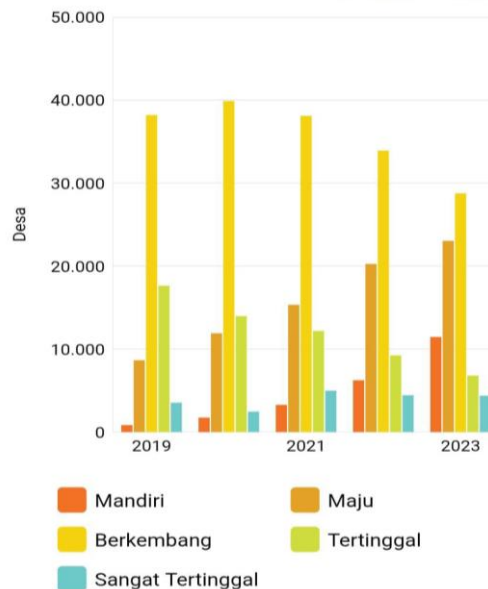


Figure 1 Status of Indonesia's Village Development Index/HDI (2019-2023)
Source: (Databoks, 2024)

The Village Development Index data shows that although the number of villages with advanced and independent status has increased, some villages still have relatively weak institutional capacity, particularly in dealing with environmental changes and the demands of public services. This condition indicates that the resilience of village institutions remains a relevant issue and requires serious attention, particularly regarding the capacity of village officials, which still needs to be improved to optimally carry out government functions (Rodiyah et al., 2021).

A similar situation is evident in Jatisari District, where village officials still face challenges in maintaining stable institutional performance and optimally implementing digital transformation. Differences in digital literacy levels, limited human resource capacity, and organizational readiness are factors that influence institutional performance.

From the findings of a preliminary study involving 30 respondents, it is clear that 70% of village institutions in Jatisari District are still grappling with issues related to institutional resilience. These problems manifest as inconsistencies in operations, a shortage of innovative policies, fragile stability in organizational functions, and inadequate application of core institutional values. This preliminary study was conducted using a structured questionnaire distributed to village officials.

Adequate human resource capacity enables officials to innovate in policymaking, improve organizational work procedures, and maintain the sustainability of public services at the local level (Isabella et al., 2025). In the context of village governance, human resources with strong technical and managerial skills are essential for increasing institutional resilience (Wahyudi et al., 2020).

Digital advancements are essential for reinforcing the relationship between workforce capacity and institutional resilience. Fadilah et al. (2025) found that digital competence significantly impacts digital human resource transformation in government institutions, demonstrating that staff readiness and capability are key determinants of successful digital transformation.

The emergence of digital tools has significantly changed how public institutions carry out their activities, emphasizing efficiency, transparency, and adaptability to environmental changes (Haedar, 2024). Toleikienė et al. (2025) demonstrate that digitalization in local government contributes to increased organizational effectiveness and institutional resilience, particularly when combined with strong human resource capacity.

Other studies also support the importance of digital transformation in improving human resource capacity. Research conducted by Kirana et al. (2023) shows that digital transformation has a significant impact on improving organizational capabilities. Narimawati et al. (2024) found that digital training programs significantly increase human resource capacity, while Ramadhani et al. (2024) highlight the positive impact of digital transformation on improving the quality of human resources.

However, previous studies tend to examine human resource capacity and digital transformation separately. There is still limited empirical evidence explaining how digital transformation interacts with human resource capacity in influencing institutional resilience, particularly in the context of village governance. This condition indicates a research gap, which is addressed in this study by integrating digital transformation as a moderating variable. Therefore, this study aims to analyze the influence of human resource capacity on village institutional resilience and examine the role of digital transformation in moderating this relationship in Jatisari District.

2. Literature Review

2.1 Institutional Theory

Institutional theory provides a fundamental framework for understanding how organizations operate within a system of rules, norms, and social expectations. Institutions are formed through regulative, normative, and cultural-cognitive structures that shape organizational behavior and decision-making processes (Woodhouse, 2024). These institutional elements influence how organizations maintain stability, adapt to environmental changes, and sustain their existence over time.

According to Kauppi (2022), institutional theory explains that organizations tend to adopt similar structures and practices, a phenomenon known as institutional isomorphism, in order to gain legitimacy. This similarity arises due to three main pressures: coercive pressure from regulations and authorities, mimetic pressure from uncertainty that encourages imitation of successful organizations, and normative pressure derived from professional norms and shared values. These pressures collectively drive organizations to conform to widely accepted standards within their institutional environment.

Furthermore, legitimacy is a central concept in institutional theory, as organizations that align with institutional expectations are more likely to gain social acceptance, access to critical resources, and long-term sustainability (Ben Boubaker et al., 2021). This implies that organizational structures and practices are not solely driven by efficiency considerations, but also by the necessity to conform to institutional norms in order to maintain legitimacy within their environment.

In relation to this study, institutional theory is relevant in explaining institutional resilience in village governance. Village institutions operate within a framework of formal regulations, social norms, and cultural values that influence their ability to maintain stability and adapt to change. Therefore, institutional resilience can be understood as the capacity of village institutions to respond to institutional pressures while maintaining legitimacy and ensuring organizational continuity in a dynamic environment.

2.2 Human Capital Theory

Human Capital Theory provides a fundamental perspective for understanding how the quality of human resources influences organizational performance and development. This theory emphasizes that human capital is not merely labor, but a form of investment that includes education, skills, health, and experience, which collectively enhance individual productivity and organizational effectiveness (Tamsah & Nurung, 2024). In this sense, human resources are viewed as strategic assets that contribute to achieving long-term organizational goals.

From a classical perspective, human capital is formed through key components such as education, training, and health, which directly affect an individual's capacity to perform tasks efficiently. However, recent developments in human capital theory highlight that human capital also includes broader dimensions such as competencies, experience, and the ability to adapt to changing environments (Tian & Tóth, 2024). This indicates that human capital is dynamic and continuously evolves in response to both formal and informal learning processes.

Furthermore, contemporary perspectives emphasize the importance of non-cognitive skills, such as personality traits, motivation, and social abilities, as integral components of human capital. These elements play a significant role in influencing individual performance, decision-making, and productivity, beyond traditional cognitive abilities (Edeji, 2024). This implies that the effectiveness of human capital is not only determined by technical skills, but also by behavioral and psychological factors that support adaptability and innovation.

In relation to this study, Human Capital Theory is relevant in explaining the role of human resource capacity in strengthening institutional resilience. The ability of village officials to perform their duties, adapt to policy changes, and utilize digital technology depends on the level of human capital they possess. Therefore, higher human resource capacity reflects stronger human capital, which in turn enhances the ability of village institutions to maintain stability and respond effectively to dynamic environmental challenges.

2.3 Digital Governance Framework

Digital Governance Framework provides a conceptual foundation for understanding how digital technologies are integrated into governance systems to improve organizational performance, transparency, and service delivery. This framework emphasizes that digital transformation is not merely the adoption of technology, but a comprehensive restructuring of governance processes, decision-making mechanisms, and institutional arrangements supported by digital systems (Papavasiliou et al., 2023). In this context, digital governance plays a critical role in aligning technological innovation with organizational objectives and public value creation.

From a systemic perspective, digital governance involves the coordination of multiple interconnected components, including technological infrastructure, human resources, institutional policies, and stakeholder interactions. Effective governance frameworks ensure that these components operate in an integrated manner, enabling organizations to manage complexity, reduce uncertainty, and enhance responsiveness in dynamic

environments (Chowdhury, 2022). This highlights that successful digital transformation depends not only on technology, but also on governance structures that regulate and guide its implementation.

Furthermore, digital governance frameworks emphasize the importance of strategic alignment, data-driven decision-making, and adaptive capacity in achieving organizational resilience. Organizations that effectively govern digital transformation are better positioned to optimize processes, improve efficiency, and respond to environmental changes through continuous innovation (Hanisch et al., 2023). This indicates that governance mechanisms are essential in ensuring that digital initiatives contribute to sustainable organizational outcomes.

In relation to this study, the Digital Governance Framework is relevant in explaining the role of digital transformation in strengthening institutional resilience in village governance. The implementation of digital systems in village administration requires not only technological readiness but also effective governance mechanisms, including regulatory support, institutional coordination, and human resource capability. Therefore, digital transformation can enhance institutional resilience when it is supported by strong governance structures that enable adaptation, efficiency, and sustainable service delivery.

2.4 Institutional Resilience

Institutional resilience refers to the ability of an organization or social system to adapt, maintain its core functions, and respond effectively to various risks and environmental changes. This concept emphasizes not only the stability of institutional structures but also the capacity for continuous adaptation and improvement.

Previous studies highlight different perspectives on institutional resilience. Woodall et al. (2024) define it as the ability of a system to adapt and enhance responsiveness to risks through the interaction of formal rules and informal values within the institution. Similarly, Drigă (2020) emphasizes the role of organizational culture, suggesting that resilience is shaped by values and norms that are sustained and transferred across generations. Meanwhile, Soon et al. (2021) focus on the dynamic aspect of resilience, describing it as the ability of institutions to maintain stability during crises while adapting through policy learning and gradual adjustments.

These perspectives indicate that institutional resilience is a multidimensional concept that integrates structural stability, cultural continuity, and adaptive capacity. In the context of village governance, institutional resilience is reflected in the ability of village institutions to maintain service delivery, adapt to policy changes, and respond effectively to social and administrative challenges.

To measure institutional resilience, dimensions (1) institutional adaptability are used, with indicators of (a) the ability to adapt to technological changes and (b) policy adjustments to change (Soon et al., 2021); dimension (2) organizational stability, with indicators of (a) resilience of basic functions and (b) consistency of work structures (Drigă, 2020); dimension (3) institutional values and norms, with indicators of (a) the application of local culture and (b) ethics of apparatus in carrying out tasks (Woodall et al., 2024); dimension (4) service continuity, with indicators of (a) service continuity when there are obstacles and (b) service support systems (Soon et al., 2021); dimension (5) adaptive leadership, with indicators of (a) leadership ability to direct and (b) encourage learning innovation (Labandera et al., 2021).

2.5 Digital Transformation

Digital transformation refers to the integration of digital technologies into organizational processes to improve performance, efficiency, and value creation. It involves not only the adoption of new technologies but also fundamental changes in how organizations operate and deliver services.

Several studies highlight different dimensions of digital transformation. Kirana et al. (2023) describe digital transformation as a gradual process of improving organizational performance through the utilization of information technology, computing systems, communication, and connectivity. Nadia and Nasution (2025) emphasize its complexity and multidimensional nature, involving the adoption of digital technologies to enhance efficiency, create value, and improve user experience. Meanwhile, Afiah et al. (2024) focus on the operational aspect, defining digital transformation as the use of information technology to optimize work processes and achieve better organizational outcomes.

These perspectives suggest that digital transformation is not merely a technological change but also an organizational transformation that integrates technology, processes, and human capabilities. In the context of village governance, digital transformation plays a strategic role in improving administrative efficiency, enhancing transparency, and supporting better public service delivery.

To measure digital transformation, dimensions (1) technological infrastructure are used, with indicators of (a) the availability of computer devices and (b) the availability of internet networks (Kirana et al., 2023); dimension (2) digital competence, with indicators of (a) digital system operation and (b) digital data utilization (Afiah et al., 2024); dimension (3) digital work culture, with indicators of (a) acceptance of technological innovation and (b) digital work collaboration (Nadia & Nasution, 2025); dimension (4) digital public services, with indicators of (a) digitalization of services and (b) transparency of digital accountability (Kirana et al., 2023); dimension (5) digital institutional innovation, with indicators of (a) digital innovation encouragement and (b) digital innovation impact (Mayasari, 2023).

2.6 Human Resource Capacity

Human resource capacity refers to the ability of individuals and organizations to perform tasks effectively based on their knowledge, skills, experience, and competencies. It reflects the readiness and capability of human resources to achieve organizational goals efficiently and sustainably.

Previous studies provide various perspectives on human resource capacity. Ridzal et al. (2022) emphasize that human resource capacity is shaped by education, training, and practical experience, which collectively determine an individual's ability to perform tasks effectively. Nurur Rohmah et al. (2022) view human resource capacity as a systematic approach to managing the roles and relationships of human resources in order to achieve organizational and societal objectives. Meanwhile, Rusdiana et al. (2023) highlight the concept of latent potential, defining human resource capacity as the level of effort and capability derived from both mental and physical strengths over time.

These perspectives indicate that human resource capacity is a multidimensional concept that encompasses competence, potential, and the effective management of human resources. In the context of village governance, human resource capacity plays a crucial role in determining the ability of village officials to implement policies, adapt to changes, and maintain institutional performance.

To measure human resource capacity, dimensions (1) knowledge are used, with indicators of (a) understanding institutional functions and (b) understanding regulations (Ridzal et al., 2022); dimension (2) skills, with indicators of (a) punctuality and (b) ability to complete work (Rusdiana et al., 2023); dimension (3) managerial ability, with indicators of (a) decision-making ability and (b) coordination ability (Nurur Rohmah et al., 2022); dimension (4) attitude and work ethics, with indicators of (a) discipline and (b) organizational ethics (Ridzal et al., 2022); dimension (5) adaptive learning capacity, with indicators of (a) training participation and (b) adaptation to technology (Mardiana Dewi & Hidayat, 2024).

3. Framework Study

Based on Institutional Theory and Human Capital Theory, human resource capacity plays a critical role in strengthening institutional resilience. Human capital, which includes knowledge, skills, and experience, enables individuals within an organization to perform tasks effectively, adapt to changes, and respond to environmental challenges. From an institutional perspective, organizations rely on capable human resources to interpret regulations, implement policies, and maintain organizational stability within a system of norms and rules. Therefore, higher human resource capacity is expected to enhance the ability of village institutions to maintain their functions and adapt to dynamic conditions.

Furthermore, the Digital Governance Framework suggests that digital transformation can influence how organizational resources are utilized and optimized. Digital technologies enable faster information processing, improved coordination, and more efficient service delivery, which can amplify the effectiveness of human resources. In this context, digital transformation acts as an enabling mechanism that strengthens the relationship between human resource capacity and institutional resilience by supporting better decision-making and adaptive responses.

However, the moderating effect of digital transformation is not always guaranteed. The effectiveness of digital transformation depends on organizational readiness, governance structures, and the capacity of human resources to utilize digital systems effectively. In situations where digital infrastructure is inadequate, or human resources lack digital competencies, digital transformation may fail to strengthen—or even weaken—the relationship between human resource capacity and institutional resilience.

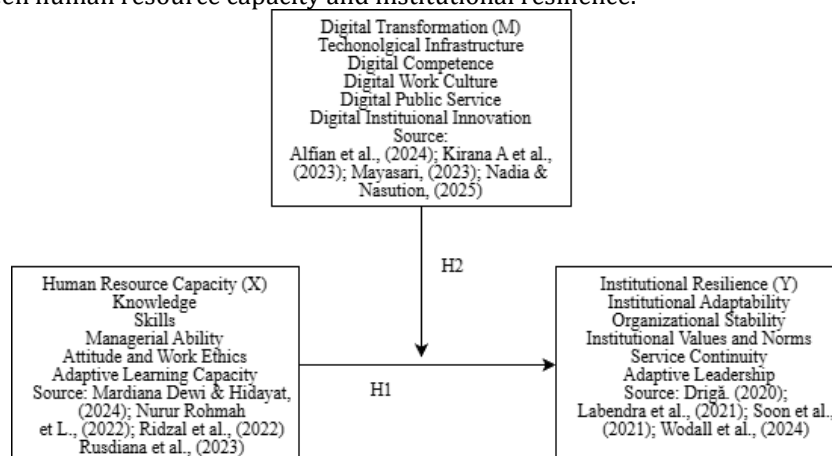


Figure 2 Framework of Thought

Based on the theoretical and empirical review, this study proposes the following hypotheses:

H1: Human resource capacity has a positive effect on institutional resilience.

H2: Digital transformation moderates the relationship between human resource capacity and institutional resilience, such that the relationship becomes stronger when digital transformation is effectively implemented.

4. Research Method

This study employs a quantitative explanatory research design to examine the relationships between human resource capacity, digital transformation, and institutional resilience. The quantitative approach is considered appropriate as it allows for hypothesis testing and analysis of causal relationships among variables using statistical methods. The analysis is conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM), which is suitable for complex models and moderation analysis.

The population of this study consists of village officials in Jatisari District. The sample size of 104 respondents was determined using the Slovin formula, ensuring an adequate representation of the population. Respondents were selected using a proportional sampling approach, where samples from each village were determined based on the number of village officials to ensure balanced representation. The selected respondents include village heads, administrative staff, and other officials directly involved in governance and public service delivery.

Data were collected using a structured questionnaire designed to measure all research variables. The measurement scale used in this study is a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), which allows respondents to express their perceptions regarding each indicator. The questionnaire items were developed based on established indicators from previous studies to ensure content validity and relevance to the research context.

Prior to full data collection, the questionnaire underwent a validation process to ensure its reliability and validity. This includes a preliminary review of the instrument and limited testing to confirm that all items are clearly understood by respondents. Furthermore, data analysis in PLS-SEM includes tests of validity and reliability, such as convergent validity, discriminant validity, and composite reliability, to ensure that the measurement model meets the required standards.

According to Sugiyono (2019), operational variables function to provide clear boundaries regarding the variables being studied, both in terms of dimensions and indicators, so that they can be measured using research instruments.

Table 1 Operational Variables

Variable	Dimension	Indicator	Source
Human Resource Capacity (X)	Knowledge	1. Understanding institutional functions	(Ridzal et al., 2022)
		2. Understanding regulations	
	Skills	1. Punctuality	(Rusdiana et al., 2023)
		2. Ability to complete work	
	Managerial ability	1. Decision making ability	(Nurur Rohmah et al., 2022)
		2. Coordination ability	
	Attitude and work ethics	1. Discipline	(Ridzal et al., 2022)
		2. Organizational ethics	
	Adaptive learning capacity	1. Training participation	(Mardiana Dewi & Hidayat, 2024)
		2. Adaptation to technology	
Institutional Resilience (Y)	Institutional adaptability	1. Adaptation to technological changes	(Soon et al., 2021)
		2. Policy adjustments	
	Organizational stability	1. Resilience of basic functions	(Drigă, 2020)
		2. Consistency of work structures	
	Institutional values and norms	1. Application of local culture	(Woodall et al., 2024)
		2. Ethics of apparatus	
	Service continuity	1. Continuity during disruptions	(Soon et al., 2021)
		2. Service support systems	
	Adaptive leadership	1. Leadership direction	(Labandera et al., 2021)
		2. Innovation encouragement	
Digital Transformation (M)	Technological infrastructure	1. Availability of devices	(Kirana et al., 2023)
		2. Internet access	
	Digital competence	1. System operation	(Afiah et al., 2024)
		2. Data utilization	

Digital work culture	1. Acceptance of innovation	(Nadia & Nasution, 2025)
Digital public services	2. Digital collaboration	
Digital institutional innovation	1. Service digitalization	(Kirana et al., 2023)
	2. Accountability transparency	
	1. Innovation encouragement	(Mayasari, 2023)
	2. Innovation impact	

5. Results and Discussion

5.1 Research Object Profile

This research was conducted on village officials in Jatisari District, a district with a fairly dominant agrarian village characteristic, where the majority of the community's economic activities still rely on the agricultural sector and household-based micro-enterprises. Jatisari District is administratively located at Jl. Raya Jatisari No. 2009, Mekarsari Village, Jatisari District, Karawang Regency, West Java 41374.

5.2 Respondent Characteristics

Respondent characteristics include gender, employee status, position, education level, length of service, and age.

Table 2 *Respondent Characteristics*

Characteristics	Frequency	%	Characteristics	Frequency	%
Gender			Education		
Male	83	80%	SMA/SMK	74	71%
Female	21	20%	Diploma	13	13%
			Bachelor	17	16%
Total	104	100%	Total	104	100%
Characteristics	Frequency	%	Characteristics	Frequency	%
Employee Status			Work Accident		
Permanent	78	25%	<2 Years	3	3%
Honorary	26	75%	2-5 Years	32	31%
			>5 Years	69	66%
Total	104	100%	Total	104	100%
Characteristics	Frequency	%	Characteristics	Frequency	%
Position			Age		
Village head	14	13%	<25 Years	4	4%
Village secretary	14	13%	25-35 Years	28	27%
Village head	26	26%	36-45 Years	42	40%
Village sub-head	25	24%	>45 Years	30	29%
Hamlet head	25	24%			
Total	104	100%	Total	104	100%

Based on the respondent characteristics in Table 1, the majority of village officials in Jatisari District are male (80%), aged 36–45 years (40%), and have a high school/vocational high school education (71%). In terms of employment status, the majority are permanent employees (75%). Furthermore, the most dominant position is filled by the head of affairs (26%), with a length of service of more than five years (66%).

5.3 Descriptive Analysis

Descriptive analysis aims to describe the empirical conditions of human resource capacity, digital transformation, and institutional resilience variables based on the perceptions of village officials in Jatisari District. Five-level Likert-scale questionnaire data were processed using the scale range method to classify respondents' assessments into very poor to very good categories.

Table 3 *Analysis of Human Resource Capacity Scale Range (X)*

Code	Indicator	Total Score	Info	Code	Indicator	Total Score	Info
X.1	Understanding institutional functions	395	Good	X.6	Coordination ability	399	Good
X.2	Understanding regulations	419	Good	X.7	Discipline	390	Good
X.3	Punctuality	397	Good	X.8	Organizational ethics	390	Good
X.4	Ability to complete work	392	Good	X.9	Training participation	398	Good

X.5	Decision making ability	421	Good	X.10	Adaptation to technology	418	Good
-----	-------------------------	-----	------	------	--------------------------	-----	------

The results of descriptive analysis using the scale range method show that all human resource capacity variable indicators are in the good category.

Table 4 Analysis of Digital Transformation Scale Range (M)

Code	Indicator	Total Score	Info	Code	Indicator	Total Score	Info
M.1	The availability of computer devices	379	Good	M.6	Digital work collaboration	402	Good
M.2	The availability of internet networks	378	Good	M.7	Digitalization of services	379	Good
M.3	Digital system operation	381	Good	M.8	Transparency of digital accountability	381	Good
M.4	Digital data utilization	377	Good	M.9	Digital innovation encouragement	381	Good
M.5	Acceptance of technological innovation	401	Good	M.10	Digital innovation impact	403	Good

The results of descriptive analysis using the scale range method show that all digital transformation variable indicators are in the Good category.

Table 5 Analysis of the Range of Institutional Resilience Scale (Y)

Code	Indicator	Total Score	Info	Code	Indicator	Total Score	Info
Y.1	The ability to adapt to technological changes	398	Good	Y.6	Ethics of apparatus in carrying out tasks	401	Good
Y.2	Policy adjustments to change	392	Good	Y.7	Service continuity when there are obstacles	405	Good
Y.3	Resilience of basic functions	402	Good	Y.8	Service support systems	397	Good
Y.4	Consistency of work structures	395	Good	Y.9	Leadership ability to direct	403	Good
Y.5	The application of local culture	395	Good	Y.10	Encourage learning innovation	404	Good

The results of descriptive analysis using the scale range method show that all institutional resilience variable indicators are in the Good category.

5.4 Evaluation of measurement models (Outer Model)

The measurement model was tested using Convergent Validity (Outer Loading) and Average Variance Extracted (AVE) values. An indicator is considered valid if its Outer Loading value is >0.70 and its AVE value is >0.50 (Hair et al., 2021).

Table 6 Results of Convergent Validity Analysis (Outer Loading)

Human Resources Capacity		Digital Transformation		Institutional Resilience	
Indicator	Outer Loading	Indicator	Outer Loading	Indicator	Outer Loading
KSDM1	0.861	TD1	0.906	KK1	0.806
KSDM3	0.886	TD2	0.857	KK3	0.865
KSDM4	0.847	TD3	0.843	KK5	0.789
KSDM6	0.897	TD4	0.901	KK6	0.844
KSDM7	0.851	TD6	0.707	KK7	0.863
KSDM8	0.845	TD7	0.909	KK8	0.775
KSDM9	0.850	TD8	0.852	KK9	0.871
		TD9	0.890	KK10	0.842
		TD10	0.702		

Reliability was evaluated using Cronbach's Alpha and Composite Reliability, with values above 0.70 indicating acceptable internal consistency. All constructs in this study demonstrate reliable measurement based on these criteria. The results of analysis showed that several indicators had outer loading values below the minimum limit of 0.70 and therefore needed to be eliminated because they did not optimally represent the latent construct. The eliminated indicators included KSDM2 (0.690), KSDM5 (0.676), and KSDM10 (0.664) in the human resource capacity variable; TD5 (0.686) in the digital transformation variable; and KK4 (0.692) in the institutional resilience variable.

Furthermore, discriminant validity was assessed to ensure that each construct is empirically distinct from others. The initial evaluation indicated that the discriminant validity criterion was not fully satisfied, primarily due to the presence of indicator KK2, which showed an excessively high loading and potential overlap with other constructs. Therefore, indicator KK2 (0.887) was removed to improve discriminant validity and ensure clearer separation between constructs. The elimination of an indicator, even with a high outer loading, is methodologically acceptable when necessary to enhance discriminant validity and improve the overall measurement model quality (Hair et al., 2021). After the removal, the model meets the required discriminant validity criteria, indicating that each construct is distinct and well-measured.

Table 7 Test Results Average Variance Extraced (AVE)

Variable	Cronbach's Alpha	Composite Reliability	Average Variance Extraced (AVE)
Human Resource Capacity	0.943	0.953	0.744
Institutional Resilience	0.937	0.948	0.693
Digital Transformation	0.949	0.957	0.713

The measurement model was evaluated through convergent validity, discriminant validity, and reliability. Convergent validity was assessed using the Average Variance Extraced (AVE), where values above 0.50 indicate that the construct adequately explains the variance of its indicators. The results show that all constructs meet the recommended AVE threshold, indicating satisfactory convergent validity.

5.5 Discriminant Validity

Discriminant validity aims to ensure that each latent construct in the research model has distinct characteristics and does not overlap with other constructs. A construct is considered to have discriminant validity if its HTMT value is less than 0.90 (Hair et al., 2021). Discriminant validity testing was also conducted using the Fornell–Larcker criterion, where the square root of the AVE for each construct must be greater than the correlation values between the other constructs. This criterion indicates that a construct is able to explain its indicators better than its relationships with other constructs.

Table 8 Validity Test Results Based on HTMT

Construct	Human Resource Capacity	Institutional Resilience	Digital Transformation
Human Resource Capacity	-	-	-
Institutional Resilience	0.893	-	-
Digital Transformation	0.643	0.771	-
Digital Transformation x Human Resource Capacity	0.532	0.536	0.501

The test results of all HTMT values between constructs were below the 0.90 limit. This indicates that each construct in the research model has clear differences from one another, so it can be concluded that discriminant validity based on HTMT has been met.

Table 9 Fornell–Larcker Criterion

Construct	Human Resource Capacity	Institutional Resilience	Digital Transformation
Human Resource Capacity	0.863	-	-
Institutional Resilience	0.868	0.833	-
Digital Transformation	0.611	0.725	0.844

Based on Table 9, the square root of the AVE (shown on the diagonal) for each construct is greater than the correlation value with other constructs. Thus, it can be concluded that discriminant validity based on the Fornell–Larcker criteria has been met.

5.6 Evaluation of structural models (Inner Model)

The structural model after bootstrapping is presented in the form of path coefficients and p-values. The relationship between latent variables is declared significant if the t-statistic value is > 1.96 (5% significance level) or p-value < 0.05 (Hair et al., 2021).

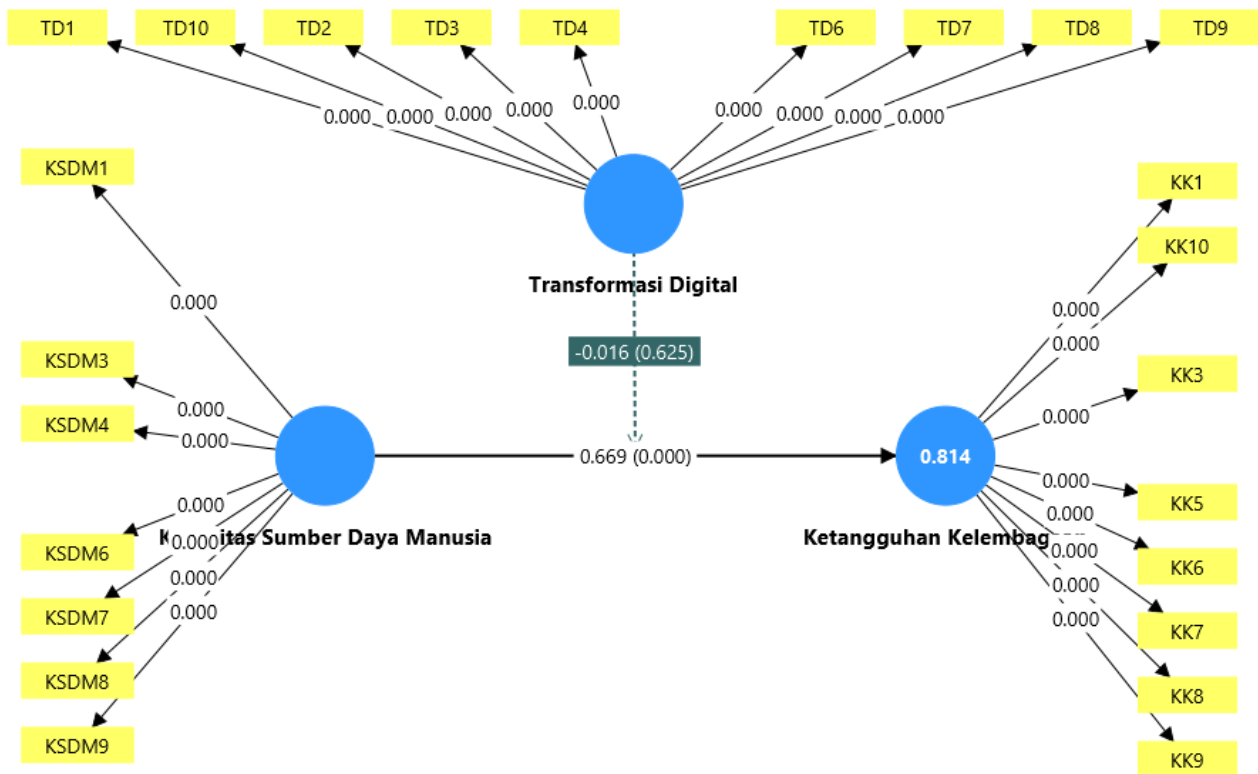


Figure 3 Output Result Bootstrapping

Figure 3 shows the results of the structural model testing after the bootstrapping process, showing that human resource capacity has a positive and significant effect on institutional resilience with a path coefficient of 0.669 and a p-value of 0.000. The R-square value of 0.814 indicates that 81.4% of the variation in institutional resilience can be explained by human resource capacity and digital transformation in the research model. Meanwhile, the moderating effect of digital transformation on the relationship between human resource capacity and village institutional resilience shows a coefficient of -0.016 with a p-value of 0.625, indicating that the effect is not significant.

The structural model analysis shows that human resource capacity has a positive and significant effect on institutional resilience ($\beta = 0.669$, $t = 12.498$, $p < 0.001$). This result indicates that higher levels of human resource capacity significantly enhance the ability of village institutions to adapt, maintain stability, and sustain their functions in facing environmental changes. This finding confirms that knowledge, skills, and managerial capabilities of human resources play a crucial role in strengthening institutional resilience. In contrast, the moderating effect of digital transformation on the relationship between human resource capacity and institutional resilience is not significant ($\beta = -0.016$, $p = 0.625$). This result suggests that digital transformation does not strengthen the influence of human resource capacity on institutional resilience.

This condition may indicate that the implementation of digital transformation in village governance has not been fully optimized. Although digital infrastructure and systems may be available, their effectiveness depends on organizational readiness, digital competence, and institutional support. Without adequate integration between human resource capacity and digital systems, digital transformation may not function as a reinforcing factor. Furthermore, this finding implies that digital transformation can act as a neutral or even weakening factor when it is not supported by sufficient internal capacity and governance mechanisms. Therefore, strengthening digital governance, improving digital competencies, and aligning technological adoption with organizational needs are essential to ensure that digital transformation contributes effectively to institutional resilience.

5.7 Coefficient of Determination (R-Square)

The coefficient of determination (R-square) is used to measure the extent to which exogenous variables explain the variation in endogenous variables in a structural model. In PLS-SEM analysis, R-square values are categorized into three levels: 0.75 (strong), 0.50 (moderate), and 0.25 (weak) (Hair et al., 2021).

Table 10 Test Results R-Square

Variable	R-square	Category
Institutional Resilience	0.814	Strong

The coefficient of determination (R-Square) for institutional resilience is 0.814, indicating that 81.4% of the variance in institutional resilience can be explained by the variables included in the model. This reflects a strong explanatory power of the structural model. The high R-square value primarily reflects the substantial contribution of human resource capacity as the main predictor in explaining institutional resilience. This is consistent with the significant path coefficient observed in the structural model. Although digital transformation is included in the model as a moderating variable, its interaction effect with human resource capacity is not statistically significant. Therefore, digital transformation does not significantly contribute to increasing the explanatory power of the relationship between human resource capacity and institutional resilience. This finding suggests that the explanatory strength of the model is largely driven by human resource capacity, while the role of digital transformation as a moderating variable has not yet been effective in influencing institutional resilience within the context of this study.

5.8 Effect Size f^2

The effect size (f^2) is used to assess the contribution of each exogenous variable to the endogenous variable in a structural model. In PLS-SEM analysis, the f^2 value is classified into three categories: 0.02 (small effect), 0.15 (medium effect), and 0.35 (large effect) (Hair et al., 2021).

Table 11 Test Results Effect Size f^2

Variable	F-square	Category
Human Resource Capacity → Institutional Resilience	1.359	Large
Digital Transformation x Human Resource Capacity → Institutional Resilience	0.003	Small

The Effect Size f^2 test results for human resource capacity on institutional resilience have an f^2 value of 1.359, which is included in the large effect category. Meanwhile, human resource capacity × digital transformation on institutional resilience has an f^2 value of 0.003, which is included in the small effect category.

5.9 Model (FIT)

Model fit evaluation aims to assess the extent to which the constructed structural model is able to represent the empirical data as a whole. In PLS-SEM analysis, model fit evaluation is complementary, because the PLS-SEM approach is more oriented towards the model's predictive capabilities (Hair et al., 2021). In this study, the evaluation of model feasibility was carried out using several model fit indicators available in SmartPLS 4, namely Standardized Root Mean Square Residual (SRMR), d_ULS, and d_G.

Table 12 Model FIT

Model fit indicators	Saturated Model	Estimated Model
SRMR	0.111	0.111
d_ULS	3.695	3.673
d_G	142.234	142.931

The model fit was assessed using the Standardized Root Mean Square Residual (SRMR). The analysis shows an SRMR value of 0.111, which exceeds the recommended threshold of 0.08, indicating that the model fit is not optimal. This result suggests that there is still a discrepancy between the observed data and the model estimation. Although the structural model demonstrates strong explanatory power, as indicated by the high R^2 value, the overall model fit should be interpreted with caution. The relatively high SRMR value may be influenced by several factors, including model complexity, the number of indicators, and potential measurement limitations. Therefore, this study acknowledges that the model fit is not fully satisfactory and considers this as a limitation. Future research is recommended to refine the measurement model, improve indicator specification, and explore alternative model structures to achieve better model fit and more robust results.

5.10 Hypothesis Test

The hypothesis testing criteria in this study were determined based on T-statistics values > 1.96 and P-values < 0.05 , which indicate that the influence between variables is declared significant at the 5 percent significance level (Hair et al., 2021).

Table 13 Hypothesis

Hypothesis	Original Sample	T Statistics	P Values	Information
Human Resource Capacity → Institutional Resilience	0.669	12.498	0.000	Significant
Digital Transformation X Human Resource Capacity → Institutional Resilience	-0.016	0.489	0.625	Not Significant

The results of the hypothesis testing indicate that Human Resource Capacity has a positive and significant effect on Village Institutional Resilience, with a path coefficient value of 0.669, a T-statistic value of 12.498, and P-values of 0.000. Thus, the first hypothesis is accepted. Meanwhile, testing the interaction variable Digital Transformation $\times$ Human Resource Capacity on Village Institutional Resilience shows a path coefficient value of -0.016, with a T-statistic value of 0.489 and P-values of 0.625. These values do not meet the significant criteria, thus, the second hypothesis (moderation) is rejected.

6. Discussion

6.1 Discussion of How Human Resource Capacity, Institutional Resilience and Digital Transformation

The results of descriptive analysis show that human resource capacity in Jatisari District is in the Good category, reflecting an adequate level of knowledge, skills, and work abilities of village officials in carrying out their duties (Congna & Saad, 2025). Institutional resilience is also categorized as Good, indicating that village institutions are generally capable of maintaining organizational functions, adapting to change, and ensuring the continuity of public services (Drigă, 2020). Meanwhile, digital transformation is also in the Good category, suggesting that the use of digital technology has supported administrative efficiency and transparency (Afiah et al., 2024). However, these findings should not be interpreted solely as optimal conditions. The effectiveness of digital transformation still depends on the readiness of human resources and the supporting organizational work culture. This implies that although all variables are descriptively categorized as good, their integration and practical implementation remain key factors in strengthening institutional resilience.

6.2 Discussion of the Influence of Human Resource Capacity on Institutional Resilience

The results confirm that human resource capacity has a positive and significant effect on institutional resilience. This finding indicates that the ability of village officials—particularly in coordination, decision-making, and task execution—plays a crucial role in enhancing institutional adaptability and stability. Rather than merely reflecting statistical significance, this result highlights the strategic importance of human resources as the main driver of institutional performance. This finding is consistent with previous research showing that human resource capacity significantly influences organizational performance (Indiyati et al., 2021). Other studies also confirm that the quality of human resources significantly affects the performance of government officials in providing public services (Zainuddin & Syugiarto, 2025). In the context of village governance, competent human resources enable institutions to respond more effectively to challenges, maintain service quality, and adapt to changing environmental demands.

6.3 Discussion of the Influence of Human Resource Capacity on Institutional Resilience Moderated by Digital Transformation

The findings indicate that digital transformation does not significantly moderate the relationship between human resource capacity and institutional resilience. This suggests that the presence of digital technology alone is not sufficient to strengthen the impact of human resource capacity on institutional outcomes. Several factors may explain this condition. First, digital infrastructure in village governance may still be limited, which restricts the effectiveness of technology utilization. Second, the level of digital literacy among village officials may vary, leading to suboptimal use of digital systems. Third, the implementation of digital transformation may still be partial and not fully integrated into organizational processes. These findings are in line with Syamsuddin et al. (2025), who emphasize that successful digital transformation requires not only technology adoption but also organizational readiness. This is also supported by Wahyudin et al. (2024), who highlight the importance of human resource competence and system integration in the success of digital transformation. Therefore, without

strong alignment between digital systems and human resource capacity, digital transformation may not function effectively as a moderating variable.

7. Conclusion

Based on the research results, it can be concluded that the human resource capacity and the level of digital transformation in supporting the resilience of village institutions in Jatisari District are descriptively in the Good category. Furthermore, the human resource capacity in Jatisari District is in the Good category and is proven to have a positive and significant effect on village institutional resilience with a path coefficient value of 0.669, a T-statistic value of 12.498 and P-values of 0.000, which meet the criteria for statistical significance. Meanwhile, digital transformation does not act as a moderating variable, with an interaction coefficient of -0.016, a T-statistic of 0.489, and P-values of 0.625, thus not strengthening the influence of human resource capacity on village institutional resilience. However, this study has several limitations. First, the research sample is limited to one district, which may limit the generalizability of the findings. Second, this study applies a cross-sectional approach, which only captures conditions at a single point in time. Third, the data are based on self-reported responses, which may be subject to potential bias. Therefore, future research is recommended to expand the research scope, apply longitudinal methods, and integrate multiple data sources to obtain more comprehensive and robust findings.

8. Implications

The implications of this research indicate the need to improve the ability of village officials to adapt to technological developments through continuous training and technical assistance, so that changes in work systems can be responded to optimally. Furthermore, the low acceptance of technological innovations demonstrates the importance of participatory strategic changes, including the socialization of the benefits of technology and the involvement of village officials in the implementation process, so that innovations are not merely administrative but are effectively integrated into daily work practices. On the other hand, the still weak consistency of work structures requires strengthening institutional resilience through clearer division of tasks, well-defined workflows, and sustainable coordination mechanisms, enabling village institutions to operate more stably and adaptively in the face of dynamic changes. From a policy perspective, these findings suggest that policymakers need to design more targeted human resource development programs and provide adequate support for digital transformation at the village level. This includes not only infrastructure provision but also strengthening digital competencies and organizational readiness. In terms of village governance reform, the study highlights the importance of integrating human resource capacity development with institutional strengthening efforts to ensure more resilient and responsive governance systems. Additionally, in the context of digital governance strategies, this research emphasizes that successful digital transformation requires alignment between technology, human resources, and organizational processes, so that digital initiatives can effectively contribute to improving institutional performance and public service delivery.

Acknowledgement

The author would like to thank the Management Study Program, Faculty of Economics and Business, Universitas Buana Perjuangan Karawang, for its support.

Conflict Of Interest

The authors declare no conflict of interest regarding the paper's publication.

Author Contribution

The authors confirm contribution to the paper as follows: study conception and design: APN, UMDf and ER; data collection: APN, UMDf and ER; analysis and interpretation of results: APN, UMDf and ER; draft manuscript preparation: APN, UMDf and ER. All authors reviewed the results and approved the final version of the manuscript.

References

- Afiah, R., Mutia, A., & Nofrizia, E. (2024). *Transformasi Digital Iwa-Qu Dalam Mendukung Ketercapaian Sustainable Development Goals (Sdg's) Perspektif Ekonomi Islam*. 2(1), 904–918. <https://doi.org/10.61722/jiem.v2i1.929>
- Ben Boubaker, K., Harguem, S., & Nyhrinen, M. (2021). IT Governance Modes Choice: An Institutional Theory Perspective. In *International Journal of Management and Data Analytics (IJMADA) Int. J. Management and Data Analytics* (Vol. 1, Number 1).

- Chowdhury, R. H. (2022). Digital government initiatives and national resilience: How digital governance frameworks were transformed post-COVID to maintain national services. *World Journal of Advanced Engineering Technology and Sciences*, 7(1), 224–240. <https://doi.org/10.30574/wjaets.2022.7.1.0098>
- Congna, H., & Saad, N. (2025). The impact of human capital on employment quality: a scoping review. *Cogent Education*, 12(1). <https://doi.org/10.1080/2331186X.2025.2552352>
- Databoks. (2024). *Jumlah Desa Maju dan Mandiri di Indonesia*. <https://Databoks.Katadata.Co.Id/Demografi/Statistik/29351b830968728/Jumlah-Desa-Maju-Dan-Mandiri-Di-Indonesia-Semakin-Meningkat-Ini-Trennya>.
- Drigă, D.-M. (2020). *A Logical Approach To The Concept Of Institutional Resilience* (Vol. 5, Number 1).
- Edeji, O. C. (2024). Neo-liberalism, human capital theory and the right to education: Economic interpretation of the purpose of education. *Social Sciences and Humanities Open*, 9. <https://doi.org/10.1016/j.ssaho.2023.100734>
- Fadilah, Y. N., Fadli, U. M. D., & Rosmawati, E. (2025). The Influence of Digital Competency on Digital Human Resources Transformation of Employees of the Department of Agriculture and Food Security of Karawang. <https://doi.org/10.30880/rmtb.2025.06.02.083>
- Haedar, A. W. (2024). *The Role of Technology in the Digital Transformation of Public Organizations in Indonesia*.
- Hair, J. F. ., Hult, G. T. M. ., Ringle, C. M. ., & Sarstedt, Marko. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)* (Third Edition). SAGE Publications, Inc.
- Hanisch, M., Goldsby, C. M., Fabian, N. E., & Oehmichen, J. (2023). Digital governance: A conceptual framework and research agenda. *Journal of Business Research*, 162. <https://doi.org/10.1016/j.jbusres.2023.113777>
- Indiyati, D., Ghina, A., & Romadhona, A. F. (2021). Human Resource Competencies, Organizational Culture, and Employee Performance. In *International Journal of Science and Society* (Vol. 3, Number 1). <http://ijsoc.goacademica.com>
- Isabella, Agustian, E., Baharuddin, T., & Ibrahim, A. H. H. (2025). Bridging E-Government With Digital Literacy: A Literature Review. *Journal of Governance and Regulation*, 14(1 (special issue)), 361–371. <https://doi.org/10.22495/jgrv14i1siart12>
- Kauppi, K. (2022). Institutional theory. www.tcpdf.org
- Kirana, A. Y., Mohamad Saifudin, Muhammad Miftachul Mukhlisin, Nina Fatmawati, & Mochammad Isa Ansori. (2023). Transformasi Digital terhadap Sumber Daya Manusia sebagai Upaya Meningkatkan Kapabilitas Perusahaan. *Digital Bisnis: Jurnal Publikasi Ilmu Manajemen Dan E-Commerce*, 2(4), 19–36. <https://doi.org/10.30640/digital.v2i4.1707>
- Labandera, E., Santiago, D., & Laurel, J. (2021). *Higher Educ Ation In Puerto R Ico: Conditions And Context Influencing Institutional Resilience*. www.EdExcelencia.org.
- Law No. 5 of 2014. Law of the Republic of Indonesia Number 5 of 2014 concerning State Civil Apparatus.
- Mardiana Dewi, S., & Hidayat, T. (2024). Dimensi Pengembangan Kapasitas Sumber Daya Manusia dalam Menghadapi Era Digitalisasi di PT Bira Bumi Persada Cirebon. *Jurnal Cendekia Ilmiah*, 3(2).
- Mayasari, A. (2023). *Peran Transformasi Digital dan Inovasi Terhadap Kinerja Organisasi Pada Sekolah Yayasan Marsudirini Cabang Yogyakarta*. Aladdin.
- Ministry of Communication and Informatics. (2023). Ministry of Communication and Informatics Performance Report 2023
- Nadia, & Nasution, M. I. P. (2025). Transformasi Digital: Peran Sistem Informasi Manajemen Dalam Meningkatkan Efisiensi Organisasi. *Jurnal Ilmiah Ekonomi, Manajemen, Bisnis Dan Akuntansi*, 2, 627–634. <https://doi.org/10.61722/jemba.v2i1.675>
- Narimawati, U., Yani Syafei, M., & Pranata, S. (2024). Penguatan Kapasitas Sumber Daya Manusia Melalui Pelatihan Keterampilan Digital Untuk Meningkatkan Produktivitas Masyarakat Di Cirebon. *Adima Awatara Pengabdian Kepada Masyarakat Jurnal*, 2(4), 42–49. <https://doi.org/10.61434/adima.v2i4.258>
- Nurur Rohmah, S., Cholid Mawardi, M., & Hariri. (2022). *Kontribusi Kompetensi Sdm, Kapasitas Sdm Dan Pemanfaatan Teknologi Informasi Terhadap Keterandalan Pelaporan Keuangan Daerah (Studi pada BKAD Kota Malang)* (Vol. 11).
- Papavasiliou, S., Gorod, A., & Reaiche, C. (2023). System of systems engineering governance framework for digital transformation: A case study of an Australian large government agency. *Systems Engineering*, 27(2), 267–283. <https://doi.org/10.1002/sys.21719>

- Ramadhani, N. R., Nurhaliza, S., & Wirawan, A. (2024). *Pengaruh Transformasi Digital Dan Kreativitas Belajar Terhadap Peningkatan Sumber Daya Manusia (Sdm) Pada Mahasiswa Universitas Negeri Makassar*. <https://ijurnal.com/1/index.php/jrpu>
- Ridzal, N. A., Sujana, I. W., & Malik, E. (2022). Pengaruh Kapasitas Sumber Daya Manusia, Pemanfaatan Teknologi Informasi Dan Sistem Pengendalian Intern Pemerintah Terhadap Kualitas Laporan Keuangan Pemerintah Daerah Kabupaten Buton Selatan. *Owner*, 6(3), 2944–2954. <https://doi.org/10.33395/owner.v6i3.882>
- Rodiyah, I., Sukmana, H., & Choiriyah, I. U. (2021). *Pengembangan Kapasitas Sdm Aparatur Dalam Penyelenggaraan Pemerintahan Desa Di Desa Kenongo Kecamatan Tulangan Kabupaten Sidoarjo*. 6(1), 6–7. <https://doi.org/10.26905>
- Rusdiana, R., Afrizal, & Kusumastuti, R. (2023). Analisis Sistem Pengendalian Internal Pemerintah dan Kapasitas Sumber Daya Manusia Terhadap Penerapan Good Governance Pada Pemerintah Kabupaten Tebo Dengan Kualitas Informasi Akuntansi Sebagai Variabel Mediasi. *Oktober-Desember*, 8(4), 304–317. <https://doi.org/10.22437/jaku.v8i4.36596>
- Soon, S., Chou, C. C., & Shi, S. J. (2021). Withstanding the plague: Institutional resilience of the East Asian welfare state. *Social Policy and Administration*, 55(2), 374–387. <https://doi.org/10.1111/spol.12713>
- Sugiyono. (2019). Metode Penelitian Kuantitatif Kualitatif Dan R&D
- Syamsuddin, Y., Muthalib, A. A., Putera, A., & Asraf, A. (2025). Transformasi Digital dan Kesiapan SDM UPTD PPA Provinsi Sulawesi Tenggara. *RIGGS: Journal of Artificial Intelligence and Digital Business*, 4(3), 5760–5768. <https://doi.org/10.31004/riggs.v4i3.2861>
- Tamsah, H., & Nurung, J. (2024). Social and Economic Interventions to Alleviate Poverty in Makassar City: An Approach Using Human Capital Theory and Kurt Lewin's Change Model. *Jurnal Manajemen Bisnis*, 11(1), 623–639. <https://doi.org/10.33096/jmb.v11i1.845>
- Tian, X., & Tóth, A. (2024). New human capital theory from the perspective of time allocation: Evolution and prospects. *Prosperitas*, 11(2), 1–13. https://doi.org/10.31570/prosp_2023_0087
- Toleikienė, R., Butkus, M., Bartuševičienė, I., & Juknevičienė, V. (2025). Assessing Digital Governance Maturity in the Context of Municipal Resilience: The Triadic Model, Its Dimensions and Interrelations. *Administrative Sciences*, 15(11), 435. <https://doi.org/10.3390/admsci15110435>
- Wahyudi, A., Sartika, D., Heru Wismono, F., Erinda Ramdhani, L., Rosalina, L., & Zakiah, S. (2020). Investigating Organizational and Human Resource Capacity of Village Government: A Case Study in Kutai Kartanegara Regency. *Policy & Governance Review*, 4(2), 99–115. <https://doi.org/10.30589/pgr>
- Wahyudin, M., Devi, R. K., & Sensuse, D. I. (2024). Digital Transformation Readiness Model in Government. *R2J*, 6(4). <https://doi.org/10.38035/rrj.v6i4>
- Woodall, B., Amekudzi-Kennedy, A., Inchauste, M. O., Sundararajan, S., Medina, A., Smith, S., & Popp, K. (2024). Institutional resilience and disaster governance: How countries respond to Black Swan events. *Progress in Disaster Science*, 22. <https://doi.org/10.1016/j.pdisas.2024.100329>
- Woodhouse, D. (2024). Institutional Theory.
- Zainuddin, & Syugiarto. (2025). Kualitas Sumberdaya Manusia Dalam Meningkatkan Kinerja Aparatur Sipil Negara. *Jurnal Kolaboratif Sains*, 8(11), 6977–6983. <https://doi.org/10.56338/jks.v8i11.9178>