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The Role of e-SAKIP in Enhancing Strategic Planning Effectiveness in Remote Public Sector Organizations: The Moderating Effect of Leadership Commitment

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A B S T R A C T

Performance management systems (PMS) have become central to public sector reform, yet their effectiveness remains contingent on contextual and organizational factors. This study examines the impact of Indonesia's electronic performance accountability system (e-SAKIP) on strategic planning effectiveness in a remote public sector organization. Using a quantitative explanatory design, data were collected from 40 employees through a census survey and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that e-SAKIP has a strong and significant positive effect on strategic planning effectiveness, indicating that digital performance systems can enhance organizational outcomes when properly utilized. However, the results also show that this relationship is not uniform across conditions. Leadership commitment emerges as a significant moderating variable, strengthening the effect of e-SAKIP on strategic planning, while digital infrastructure and dynamic organizational capability do not exhibit significant moderating effects. These findings highlight the importance of managerial and institutional factors in translating digital systems into strategic outcomes. The study contributes to the literature by providing empirical evidence from a remote administrative context, emphasizing that digital governance effectiveness depends not only on technological availability but also on leadership-driven utilization and organizational alignment.

INTRODUCTION

Performance management systems (PMS) have become central instruments in modern public governance, shaping organizational behavior, enhancing transparency, and improving service delivery through structured performance evidence, monitoring, and feedback loops (Heinrich, 2008; Gomes et al., 2017; Vigoda-Gadot & Mizrahi, 2006; Christl et al., 2020). Beyond their administrative role, PMS are increasingly positioned as strategic tools that align organizational actions with policy goals and enable continuous learning; however, their effectiveness depends heavily on contextual alignment with institutional environments and organizational culture, as well as the ability to mitigate risks such as gaming and decoupling between indicators and actual outcomes (Heinrich, 2008; Gomes et al., 2017; Christl et al., 2020). These tensions reflect a broader trade-off between data rigor and public legitimacy, requiring systems that balance external accountability demands with internal learning processes (Vigoda-Gadot & Mizrahi, 2006; Heinrich, 2008).

In response to these challenges, the digitalization of performance management systems—such as Indonesia's electronic-based system (e-SAKIP)—has emerged as a key pillar of bureaucratic reform. Digital PMS enable real-time data collection, cross-level information integration, and enhanced transparency among stakeholders, thereby strengthening evidence-based decision-making and accelerating organizational learning (Hammerschmid et al., 2018; Seri & Zanfei, 2013; Barnow & Heinrich, 2009; Žubule & Grabusts, 2015). The integration of data analytics further enhances policy evaluation capacity and supports continuous assessment of program outcomes, reinforcing the strategic value of digital governance in public administration (Xiong et al., 2024; Hu, 2011; M et al., 2024). Empirical contexts, including Indonesian public sector reforms, indicate that systems like e-SAKIP are designed not merely as reporting tools but as integrated mechanisms linking planning, budgeting, implementation, and evaluation processes across organizational levels.

Despite these advancements, significant challenges persist, particularly in geographically remote or resource-constrained environments. The implementation of digital PMS often faces infrastructural limitations, inadequate human resource capacity, and restricted data accessibility, which collectively hinder effective adoption and utilization (Sagarik et al., 2018; Dogbe et al., 2024; Gomes et al., 2017). Moreover, decentralization and political-economic constraints can disrupt information flows and weaken accountability mechanisms, leading to inconsistencies between central policies and local implementation (Brinkerhoff & Wetterberg, 2013; Kaur et al., 2021). These conditions are especially evident in remote administrative units, where disparities in digital readiness and institutional capacity shape the effectiveness of performance systems.

Prior studies consistently highlight that the success of PMS and digital governance initiatives is contingent upon organizational factors such as leadership commitment, digital infrastructure readiness, and adaptive capabilities. Strong leadership fosters the adoption of data-driven practices and ensures that performance information is actively used in decision-making

processes, while adequate infrastructure enables efficient data processing and communication (Vigoda-Gadot & Mizrahi, 2006; Seri & Zanfei, 2013; Robichau & Lynn, 2009). At the same time, dynamic organizational capabilities—defined by the ability to adapt, innovate, and transform—are critical in translating digital systems into meaningful performance improvements (Sagarik et al., 2018; Dogbe et al., 2024). However, empirical findings remain mixed regarding the extent to which these factors function as moderators in the relationship between digital PMS and strategic outcomes.

Another important dimension concerns the variation between central and local government units. Differences in decentralization, institutional capacity, and contextual adaptability influence how performance indicators are interpreted and applied, often leading to disparities in strategic planning effectiveness. While decentralization can enhance efficiency and responsiveness when supported by appropriate incentives and accountability mechanisms, misalignment between centrally defined indicators and local realities may reduce policy effectiveness and create implementation gaps (Brinkerhoff & Wetterberg, 2013; Roh, 2018; Frinaldi et al., 2023). Comparative analyses suggest that institutional context and organizational culture play decisive roles in determining whether PMS contribute to improved public service outcomes or remain symbolic compliance tools (Barnow & Heinrich, 2009; Gomes et al., 2017; Robichau & Lynn, 2009).

Although the literature has extensively examined PMS, digital governance, and public sector performance, a critical gap remains. Existing studies often address these elements separately or focus on aggregate-level analyses, with limited attention to the direct relationship between digital PMS implementation and strategic planning effectiveness within a unified empirical model, particularly in remote or peripheral administrative contexts. Furthermore, the moderating roles of leadership, infrastructure, and organizational capabilities are rarely tested simultaneously, leaving an incomplete understanding of how contextual factors shape system effectiveness.

This study aims to address these gaps by examining the effect of e-SAKIP implementation on strategic planning effectiveness in a remote public sector unit, while incorporating leadership commitment, digital infrastructure readiness, and dynamic organizational capabilities as moderating variables. By focusing on a geographically peripheral context, the study offers a nuanced perspective on how digital performance systems function under constraints and contributes to both theoretical and practical discussions on public sector performance management. Specifically, it advances the literature by positioning e-SAKIP not merely as an accountability mechanism but as a strategic determinant of organizational effectiveness, while providing policy-relevant insights for strengthening digital governance and reducing disparities between central and local government performance systems.

LITERATURE REVIEW

Performance Accountability Theory and Organizational Effectiveness

Performance accountability theory explains the relationship between performance management systems (PMS) and organizational effectiveness

through feedback mechanisms, organizational learning, and alignment between performance indicators and policy objectives. Well-designed PMS provide continuous feedback loops that enable organizations to monitor progress, adjust strategies, and improve outcomes over time (Rhodes et al., 2012; Barnow & Heinrich, 2009; Conaty, 2012). In this perspective, PMS function not merely as reporting tools but as instruments for strategic control and adaptive governance.

The effectiveness of PMS, however, depends on contextual design and implementation. Systems that incorporate real-time monitoring, stakeholder participation, and leadership support are more likely to translate measurement into actual performance improvement (Rhodes et al., 2012; Barnow & Heinrich, 2009; Conaty, 2012). Conversely, poorly designed systems risk becoming ceremonial, emphasizing input/output reporting without meaningful linkage to policy outcomes. This creates vulnerabilities such as gaming behavior and decoupling, where reported indicators diverge from actual performance. Therefore, contextual alignment, learning loops, and participatory governance are critical to ensuring that PMS contribute to genuine organizational effectiveness.

Performance Accountability Theory and Organizational Effectiveness

The emergence of e-government and digital governance has significantly transformed the role of PMS in public administration. Digital systems enhance strategic planning effectiveness by enabling real-time data access, cross-level transparency, and continuous policy evaluation. These capabilities allow organizations to integrate planning, implementation, and evaluation processes more effectively, thereby strengthening evidence-based decision-making (Sagarik et al., 2018; Dogbe et al., 2024; Hu, 2011).

Empirical studies indicate that the adoption of information and communication technologies (ICT) improves public sector performance when supported by strong governance frameworks and institutional capacity (Atobishi et al., 2024; Dogbe et al., 2024). Key enabling factors include ICT leadership, system quality, and the integration of digital tools into strategic processes. However, the benefits of digital governance are highly context-dependent. Variations in infrastructure readiness, organizational culture, and intergovernmental coordination can significantly influence the extent to which digital systems enhance accountability and planning effectiveness.

Furthermore, digital transformation is not purely technological but also organizational. It requires cultural change, analytical capability development, and leadership that promotes data-driven practices. Without these complementary elements, digital PMS may fail to deliver their intended impact, remaining underutilized or fragmented across organizational units (Sagarik et al., 2018; Yang, 2016)

The Role of Leadership, Digital Infrastructure, and Organizational Capability

Leadership plays a central role in the successful implementation of PMS and digital governance. Strategic leadership and central commitment facilitate adoption, legitimacy, and coordination, while also driving cultural change within organizations (Sagarik et al., 2018; Fernández et al., 2010; Brinkerhoff &

Wetterberg, 2013). Leaders are instrumental in linking performance targets to institutional incentives, overcoming resistance to change, and ensuring that performance data are actively used in decision-making processes.

Digital leadership, in particular, enhances managerial readiness to leverage technology for performance measurement and analytics (Atobishi et al., 2024; Dogbe et al., 2024; Goh, 2012). At the same time, digital infrastructure serves as a foundational enabler, providing the technological capacity required for data collection, processing, and communication. However, infrastructure alone is insufficient without organizational capability.

Organizational capability comprising skilled human resources, knowledge management practices, and a learning-oriented culture determines whether performance data are used for policy improvement or remain as routine reporting artifacts (Conaty, 2012; Heinrich, 2002; Fernández et al., 2010). The interaction among leadership, infrastructure, and capability highlights that effective PMS implementation is a multidimensional process, requiring alignment across technological, human, and institutional dimensions.

Decentralization Context and Research Gap

Decentralization introduces additional complexity in the implementation of PMS and digital governance. While decentralization can enhance efficiency and responsiveness by granting autonomy to local units, its effectiveness depends on the balance between central oversight and local flexibility (Rhodes et al., 2012; Barnow & Heinrich, 2009). Misalignment between centrally defined indicators and local conditions can weaken the impact of PMS, leading to reduced policy effectiveness and implementation gaps.

The interaction between digital reform and organizational culture further shapes governance outcomes. Successful reform requires not only technological adoption but also alignment with institutional norms and practices (Barnow & Heinrich, 2009; Conaty, 2012). In decentralized systems, this alignment becomes more challenging due to variations in capacity, resources, and stakeholder engagement across regions.

Despite growing evidence on the benefits of digital PMS, significant research gaps remain, particularly in remote or peripheral contexts. Existing studies highlight positive effects of digitalization on agility and accountability, yet these effects are moderated by infrastructure availability, local capacity, and institutional design (Dogbe et al., 2024; Atobishi et al., 2024; Sagarik et al., 2018; Heinrich, 2002). Empirical research in remote areas remains limited, especially studies that test causal relationships between digital PMS implementation and strategic planning outcomes.

Key gaps include the lack of evidence on: (1) the causal impact of e-SAKIP on service outcomes in remote regions; (2) the role of interoperability, data standards, and local analytical capacity; (3) incentive design to mitigate gaming in decentralized contexts; and (4) long-term adaptation and organizational learning processes (Goh, 2012; Heinrich, 2002; Brinkerhoff & Wetterberg, 2013; Conaty, 2012). This study positions itself within these gaps by examining the relationship between e-SAKIP implementation and strategic planning

effectiveness in a remote public sector context, while incorporating key moderating variables to better understand contextual dynamics.

METODOLOGY

Decentralization Context and Research Gap

Research Design and Data

This study employs a quantitative explanatory design to examine the relationship between the implementation of e-SAKIP and strategic planning effectiveness in a public sector organization. The research adopts a positivist paradigm with a deductive approach, where hypotheses are derived from established theories of performance accountability and digital governance and tested empirically. A cross-sectional survey method is used to collect primary data through structured questionnaires distributed to employees involved in planning, reporting, and evaluation processes.

The population consists of 40 employees of a public airport unit in a remote region, and a census (saturated sampling) approach is applied, meaning all population members are included as respondents (n = 40). This approach enhances internal validity by eliminating sampling error within the local context, making it particularly suitable for small and geographically isolated populations (Nazarwin, 2024). However, it limits external generalizability due to its context-specific nature and potential low variability in responses, which may affect model robustness (Smith et al., 2021; Davidescu et al., 2025).

Variables and Measurement

The study includes one independent variable (e-SAKIP implementation), one dependent variable (strategic planning effectiveness), and three moderating variables: leadership commitment, digital infrastructure readiness, and organizational dynamic capability. All variables are measured using Likert-scale indicators (1–5).

Table 1. Operationalization of Variables

Variable	Indicators
e-SAKIP (X)	Planning (X1–X2), Measurement (X3–X4), Reporting (X5–X6), Evaluation Use (X7–X8)
Strategic Effectiveness (Y)	Goal Clarity (Y1–Y2), Alignment (Y3–Y4), Evaluation (Y5–Y6)
Leadership Commitment (M1)	Role modeling, policy support, supervision
Digital Infrastructure (M2)	Network, hardware, technical support
Dynamic Capability (M3)	Adaptation, innovation, transformation

Procedure and Analytical Technique

The research follows a structured procedure consisting of problem identification, literature review, hypothesis formulation, instrument development, data collection, analysis, and conclusion. Data analysis is conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0.

PLS-SEM is selected due to its suitability for analyzing complex models involving latent constructs and predictive relationships in survey-based studies. It is particularly appropriate for moderate sample sizes, non-normal data distributions, and exploratory causal modeling in public sector research (Atobishi et al., 2024; Davidescu et al., 2025; Dogbe et al., 2024; Tran et al., 2021). The model includes both measurement (outer model) and structural (inner model) assessments.

The analysis involves: (1) validity testing using outer loadings (≥0.70) and Average Variance Extracted (AVE ≥0.50); (2) reliability testing using Composite Reliability and Cronbach's Alpha (≥0.70); (3) structural model evaluation using R^2 and path coefficients; and (4) hypothesis testing through bootstrapping with 5,000 subsamples, using thresholds of $t > 1.96$ and $p < 0.05$.

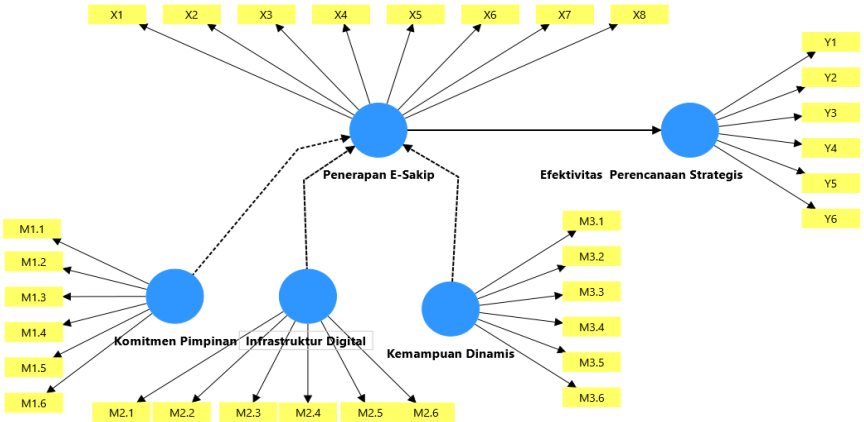

Figure 1. Structural Model

The model illustrates the direct effect of e-SAKIP (X) on strategic planning effectiveness (Y), along with interaction effects involving leadership commitment

(M1), digital infrastructure (M2), and dynamic capability (M3) as moderating variables.

Validity, Limitations, and Ethics

While cross-sectional design enables efficient data collection and supports predictive modeling, it limits causal inference and is susceptible to common-method bias due to reliance on self-reported data (Smith et al., 2021; Oppi et al., 2021; Davidescu et al., 2025). Additionally, results may not generalize across different spatial or temporal contexts, as the data represent a single snapshot of organizational conditions.

To mitigate these limitations, the study applies robustness checks through bootstrapping and emphasizes cautious interpretation of causal relationships. Future research is recommended to incorporate longitudinal or experimental designs to strengthen inference (Rezaee, 2022; Tran et al., 2021).

The study is non-interventional, involving minimal researcher interference. Although formal ethical approval is not explicitly stated, the research adheres to basic ethical principles, including voluntary participation, confidentiality, and the use of data solely for academic purposes.

RESULT

Respondent Characteristics

The study involved 40 respondents drawn from all employees of the organization using a census sampling approach. The gender composition shows a strong dominance of male respondents, which reflects the operational nature of airport services.

Table 2. Gender Distribution

Gender	**Frequency**	**Percentage**
Male	28	70.0%
Female	12	30.0%
Total	40	100%

Employment Status

The employment status of respondents varies across several categories, indicating institutional diversity within the organization.

Table 3. Employment Status

Status	Frequency	Percentage
ASN	9	22.5%
PNS	7	17.5%
CPNS	3	7.5%
PPPK	8	20.0%
Contract	5	12.5%
Honorary	4	10.0%
Others	4	10.0%
Total	40	100%

Table 3 presents the distribution of respondents based on their employment status, comprising a total of 40 individuals with a relatively diverse composition. The largest proportion consists of ASN employees, accounting for 9 respondents (22.5%), followed by PPPK with 8 respondents (20.0%) and PNS with 7 respondents (17.5%). Meanwhile, contract employees represent 5 respondents (12.5%), while both honorary staff and other categories each account for 4 respondents (10.0%). CPNS constitutes the smallest group, with 3 respondents (7.5%). This distribution indicates that the sample is predominantly composed of formally employed government personnel, while still incorporating representation from various other employment statuses, thereby providing a comprehensive reflection of workforce characteristics within the organizational context under study.

Descriptive Statistics of Variables

To provide an initial overview of the data distribution, this section presents the descriptive statistics of the main research variables. The analysis includes key measures such as mean, minimum, maximum, and standard deviation, which offer insights into the central tendency, variability, and overall pattern of respondents' perceptions regarding each construct examined in this study.

Table 4. Descriptive Statistics

Variable	Mean	Min	Max	Std Dev
e-SAKIP (X)	4.708	3.556	5.000	0.400
Strategic Effectiveness (Y)	4.650	3.300	5.000	0.459
Leadership Commitment (M1)	4.760	4.000	5.000	0.356
Digital Infrastructure (M2)	4.505	2.500	5.000	0.621
Dynamic Capability (M3)	4.678	3.700	5.000	0.415

All variables exhibit high mean values (>4.5), indicating that respondents perceive the implementation of e-SAKIP and strategic planning effectiveness as very strong. Leadership commitment records the highest mean (4.760), while digital infrastructure has the lowest (4.505), suggesting relatively weaker consistency in technological readiness.

The low standard deviation values indicate relatively homogeneous responses, which is consistent with the use of census sampling within a single organizational unit.

Measurement of e-SAKIP Implementation Index

The level of e-SAKIP implementation is operationalized as a composite construct consisting of four dimensions: (1) ICT infrastructure and access, (2) functional usage, (3) analytical capability, and (4) governance and operational integration. These dimensions are reflected in indicators related to planning, measurement, reporting, and evaluation utilization.

The high mean score (4.708) suggests that the organization demonstrates a strong level of system adoption across these dimensions. However, qualitative interpretation of the indicators indicates that while functional usage is high,

analytical capability and integration with decision-making processes show relatively lower consistency.

Measurement Model Evaluation (Outer Model)
Outer Loadings – e-SAKIP

The outer loading values for e-SAKIP indicators range from 0.691 to 0.935, with the majority exceeding the recommended threshold of 0.70.

Table 5. Outer Loadings (e-SAKIP)

Indicator	Outer Loading
X1	0,843
X2	0,879
X3	0,803
X4	0,764
X5	0,804
X6	0,858
X7	0,895
X8	0,935
X9	0,691

Table 6. Strategic Effectiveness

Indicator	Outer Loading
Y1	0,929
Y2	0,950
Y3	0,879
Y4	0,829
Y5	0,884
Y6	0,778
Y7	0,789
Y8	0,841
Y9	0,654
Y10	0,801

Table 7. Leadership Commitment

Indicator	Outer Loading
M1.1	0,478
M1.2	0,706
M1.3	0,796
M1.4	0,778
M1.5	0,799
M1.6	0,785
M1.7	0,820
M1.8	0,872
M1.9	0,885
M1.10	0,820

Table 8. Digital Infrastructure

Indicator	Outer Loading
M2.1	0,607
M2.2	0,694
M2.3	0,734
M2.4	0,884
M2.5	0,915
M2.6	0,881
M2.7	0,895
M2.8	0,887
M2.9	0,811
M2.10	0,853

Table 9. Dynamic Capability

Indicator	Outer Loading
M3.1	0,722
M3.2	0,813
M3.3	0,792
M3.4	0,788
M3.5	0,863
M3.6	0,880
M3.7	0,839
M3.8	0,849
M3.9	0,781
M3.10	0,741

The evaluation of outer loadings indicates that the measurement model demonstrates generally strong convergent validity across all constructs. For the e-SAKIP variable, the outer loading values range from 0.691 to 0.935, with the majority of indicators exceeding the recommended threshold of 0.70, suggesting that most items are reliable in explaining the construct. Although one indicator (X9 = 0.691) falls slightly below the threshold, it remains acceptable within exploratory research contexts. Similarly, the Strategic Effectiveness construct shows robust results, with outer loadings ranging from 0.654 to 0.950, where most indicators exhibit high loadings, indicating strong representation of the latent variable. One indicator (Y9 = 0.654) is marginally below 0.70 but can still be tolerated.

For the moderating variables, Leadership Commitment presents a wider range of outer loadings (0.478–0.885), with one indicator falling below the critical value of 0.50, indicating a potential issue in measurement reliability that may require revision or removal. In contrast, Digital Infrastructure (0.607–0.915) and Dynamic Capability (0.722–0.880) show acceptable to strong loading values, confirming that their indicators adequately capture the respective constructs. Overall, these findings suggest that the constructs meet the minimum requirements for convergent validity, although minor refinements—particularly

within the Leadership Commitment construct—could enhance the overall measurement quality.

Construct Validity and Reliability

Table 10. Reliability and Validity

Variable	AVE	CR	Cronbach's Alpha
X	0.658	0.945	0.935
Y	0.728	0.964	0.957
M1	0.622	0.941	0.926
M2	0.727	0.963	0.956
M3	0.667	0.952	0.941

The results presented in Table 4.6 indicate that all constructs meet the required criteria for both validity and reliability. In terms of convergent validity, all variables demonstrate Average Variance Extracted (AVE) values above the recommended threshold of 0.50, with Strategic Effectiveness (Y) and Digital Infrastructure (M2) showing the highest AVE values (0.728 and 0.727, respectively), indicating a strong ability of the indicators to explain their respective constructs. Meanwhile, e-SAKIP (X), Leadership Commitment (M1), and Dynamic Capability (M3) also exhibit satisfactory AVE values ranging from 0.622 to 0.667.

Regarding reliability, all constructs show high Composite Reliability (CR) values, ranging from 0.941 to 0.964, which exceed the recommended minimum of 0.70, confirming strong internal consistency among the indicators. Similarly, Cronbach's Alpha values for all variables are also well above the acceptable threshold, ranging from 0.926 to 0.957, further supporting the reliability of the measurement model. Overall, these findings confirm that the constructs used in this study are both valid and reliable, indicating that the measurement model is robust and suitable for further structural analysis.

Discriminant Validity

Discriminant validity is confirmed using the Fornell-Larcker criterion, where the square root of AVE for each construct exceeds its correlations with other constructs.

Table 11. Fornell-Larcker Criterion Test

Variabel	X	Y	M1	M2	M3
X	0,811	0,893	0,559	0,543	0,791
Y	0,893	0,853	0,623	0,698	0,865
M1	0,559	0,623	0,788	0,547	0,727
M2	0,543	0,698	0,547	0,853	0,736
M3	0,791	0,865	0,727	0,736	0,817

The discriminant validity assessment using the Fornell-Larcker criterion reveals that not all constructs fully satisfy the required threshold, where the square root of AVE should exceed inter-construct correlations. Although several constructs such as M1, M2, and M3 demonstrate adequate discriminant validity indicated by their diagonal values (0.788, 0.853, and 0.817) being higher than their

correlations with other variables—issues are observed in the X and Y constructs. Specifically, the correlation between X and Y (0.893) exceeds their respective square root of AVE values (0.811 for X and 0.853 for Y), suggesting a lack of clear distinction between these two constructs. This indicates potential multicollinearity or conceptual overlap, implying that the indicators of X and Y may not be sufficiently discriminant and may require further refinement to improve construct validity within the measurement model.

Table 12. Model Fit (R^2 and Q^2)

Model	R^2	Q^2
Main Model	0.797	0.766
Moderation M1	0.883	0.776
Moderation M2	0.865	0.780
Moderation M3	0.865	0.767

The R^2 values indicate strong explanatory power, with the model explaining up to 79.7% of variance in strategic effectiveness.

Hypothesis Testing

Table 13. Model Fit (R^2 and Q^2)

Relationship	Coefficient	t-value	p-value
X → Y	0.893	12.225	0.000

The results of the direct effect analysis indicate that the relationship between X and Y is positive and statistically significant. This is evidenced by a path coefficient of 0.893, which reflects a strong positive influence of X on Y. Furthermore, the t-value of 12.225 far exceeds the critical threshold (typically 1.96 for a 95% confidence level), and the p-value of 0.000 is well below the significance level of 0.05, confirming the robustness of the relationship. These findings suggest that X has a substantial and meaningful impact on Y, implying that improvements in X are associated with significant increases in Y within the context of this study.

Table 14. Moderation (M1) Leadership

Relationship	Coefficient	t-value	p-value
X × M1 → Y	0.282	4.394	0.000

The results presented in Table 14 indicate that leadership (M1) significantly moderates the relationship between the independent variable (X) and the dependent variable (Y). This is evidenced by the interaction term (X × M1 → Y), which has a positive coefficient of 0.282, suggesting that higher levels of leadership strengthen the effect of X on Y. The t-value of 4.394 exceeds the commonly accepted threshold of 1.96, and the p-value of 0.000 is well below 0.05, confirming that this moderating effect is statistically significant. Therefore, leadership plays an important role in enhancing the influence of X on Y,

indicating that the relationship becomes stronger when leadership is more effective.

Table 15. Moderation (M2) Infrastructure

Relationship	Coefficient	t-value	p-value
X × M2 → Y	-0.067	0.958	0.344

The results show that infrastructure (M2) does not significantly moderate the relationship between the independent variable (X) and the dependent variable (Y). The interaction term (X × M2 → Y) has a negative coefficient of -0.067, indicating a slight weakening effect; however, this effect is not statistically meaningful. This is supported by the t-value of 0.958, which is below the threshold of 1.96, and the p-value of 0.344, which is greater than 0.05. Therefore, it can be concluded that infrastructure does not play a significant moderating role in influencing the relationship between X and Y.

Table 16. Moderation (M3) Dynamic Capability

Relationship	Coefficient	t-value	p-value
X × M3 → Y	-0.006	0.081	0.936

The results in Table 16 indicate that dynamic capability (M3) does not significantly moderate the relationship between the independent variable (X) and the dependent variable (Y). The interaction term (X × M3 → Y) shows a very small negative coefficient of -0.006, suggesting an almost negligible weakening effect. This is further supported by the t-value of 0.081, which is far below the critical value of 1.96, and the p-value of 0.936, which is much greater than the 0.05 significance level. Therefore, it can be concluded that dynamic capability does not have a meaningful or statistically significant moderating effect on the relationship between X and Y.

Table 17. Hypothesis Summary

Hypothesis	Result
H1	Supported
H2	Supported
H3	Not Supported
H4	Not Supported

Overall, the results indicate that e-SAKIP has a strong and significant effect on strategic planning effectiveness. Leadership commitment acts as a critical reinforcing factor, while digital infrastructure and dynamic capability do not show significant moderating effects.

Synthesis of Results

The findings reveal three key insights. First, the implementation of e-SAKIP is perceived as highly developed across organizational processes, indicating strong institutional adoption. Second, the system has a substantial positive impact on strategic planning effectiveness, suggesting that digital performance systems contribute meaningfully to organizational outcomes. Third, the

effectiveness of the system is contingent upon leadership commitment, highlighting the importance of managerial and institutional support.

These results also suggest that infrastructure and organizational capability function more as baseline conditions rather than active moderators, reinforcing the idea that technology alone is insufficient without strong governance and leadership integration.

RESULT

The findings of this study provide empirical support for the contingency perspective in public performance management, demonstrating that the impact of digital systems such as e-SAKIP on strategic planning effectiveness is conditional rather than automatic. The strong and significant direct effect observed indicates that digital performance systems can enhance planning effectiveness when they are meaningfully integrated into organizational processes. This aligns with prior studies emphasizing that the benefits of digitalization depend on actual organizational use of ICT, supported by analytical capabilities and institutional readiness, rather than mere technological availability (Dogbe et al., 2024; Davidescu et al., 2025; Oppi et al., 2021). At the same time, the findings challenge normative assumptions that infrastructure investment alone leads to improved outcomes, as evidenced by the non-significant moderating effect of digital infrastructure in this study.

A key contribution of this research lies in highlighting the dominant role of leadership commitment as a moderating factor. The significant interaction between e-SAKIP and leadership suggests that digital systems require strong managerial direction to translate data into actionable strategies. This supports the argument that leadership determines vision, legitimacy, and resource allocation, thereby enabling the transformation of ICT use into strategic outcomes (Sagarik et al., 2018; Dogbe et al., 2024). In contrast, the absence of significant moderation from dynamic capability suggests that organizational adaptability alone may not directly amplify system effectiveness without alignment in implementation practices or leadership direction. These results reinforce the view that leadership acts as a central mechanism linking performance systems to organizational outcomes, particularly in constrained environments.

From a practical perspective, the findings have important implications for public organizations in remote areas. First, emphasis should be placed on enhancing the functional use of digital systems through simple, real-time monitoring tools and dashboards to support decision-making processes. Second, strengthening organizational capabilities—especially analytical skills and learning practices—is essential to ensure that performance data are utilized for strategy revision rather than merely for reporting. Third, policy design should prioritize contextualized performance indicators and lightweight interoperability solutions, supported by central government incentives and capacity-building programs to address local constraints. These strategies are particularly relevant for remote administrative units, where infrastructural and human resource limitations can hinder effective digital transformation.

Despite its contributions, this study has several limitations. The use of a cross-sectional design restricts the ability to draw strong causal inferences, as the

observed relationships are based on a single time-point and may be influenced by unobserved confounding variables. In addition, the reliance on self-reported survey data raises the possibility of common-method bias, which may affect construct validity. The study's focus on a single organizational unit with a relatively small sample size also limits the generalizability of findings to other contexts. These limitations are consistent with broader challenges identified in the literature on digital governance and performance management research.

Future research should address these limitations by adopting more robust research designs, such as longitudinal or experimental approaches, to better capture causal mechanisms and temporal dynamics. Multi-level and comparative studies across different regions would also provide deeper insights into contextual heterogeneity, particularly in remote or developing areas. Furthermore, future studies could explore the role of mediating variables such as trust, knowledge sharing, and governance design, as well as evaluate cost–benefit aspects and incentive structures to mitigate risks such as gaming behavior. These directions would contribute to a more comprehensive understanding of how digital performance systems operate across diverse institutional settings and support more effective policy interventions.

Conclusion

This study demonstrates that the implementation of e-SAKIP plays a significant role in enhancing strategic planning effectiveness within a remote public sector organization. The findings confirm that digital performance accountability systems can function as strategic instruments rather than merely administrative tools when they are effectively integrated into organizational processes. The strong positive relationship between e-SAKIP and strategic planning effectiveness indicates that structured, data-driven performance systems contribute to better alignment, monitoring, and evaluation of organizational strategies.

Importantly, the study highlights that this effect is contingent upon organizational conditions. Leadership commitment emerges as the most critical moderating factor, reinforcing the role of managerial direction in ensuring that digital systems are actively used for decision-making and strategic improvement. In contrast, digital infrastructure and dynamic capability do not significantly moderate the relationship, suggesting that technology alone is insufficient without effective utilization and governance.

Overall, the study underscores the need for a balanced approach to digital governance, where technological systems, leadership, and organizational practices are aligned. These findings provide both theoretical and practical insights for strengthening performance management systems, particularly in remote and resource-constrained public sector contexts.

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