JURNAL BINA PRAJA
Journal of Home Affairs Governance

ARTICLE

A Model of Regional Government Information System Implementation in Gorontalo Province Based on Structural Equation Modeling

The Role of Organizational Commitment and Support, Human Resource Capacity, and Technology Readiness

Firmansyah Yusuf, Dedi Budiman Hakim, A. Faroby Falatehan
IPB University, Bogor, Indonesia

firmanys30@gmail.com

Abstract: Since the Regulation of the Minister of Home Affairs of the Republic of Indonesia No. 70 of 2019 required all regional governments to adopt the Regional Government Information System (SIPD), the system has been expected to be fully integrated into planning, budgeting, and reporting at every regional agency. In practice, an obligation on paper has not automatically been matched by readiness in the field. In Gorontalo province, SIPD administrators across various regional agencies still contend with a range of problems, from uneven technical understanding to institutional support that varies markedly across agencies. This study analyzes three factors thought to affect the effectiveness of SIPD implementation: organizational commitment and support, human resource capacity, and technology readiness. Data were collected from 125 SIPD administrators across regional agencies throughout Gorontalo province through a questionnaire and analyzed using partial least squares structural equation modeling (PLS-SEM). Human resource capacity emerged as the most decisive factor. Organizational commitment and support ranked second, because even the best system requires consistent institutional backing rather than the competence of individual users alone. Technology readiness showed a positive but statistically non-significant association, most likely because technological infrastructure in Gorontalo is already relatively adequate. In other words, the current barriers to SIPD implementation are no longer about devices or networks but about people and organizational governance.

Keywords: regional government information system; human resource capacity; organizational commitment; technology readiness.

Citation: Yusuf, F., Hakim, D. B., & Falatehan, A. F. (2026). A Model of Regional Government Information System Implementation in Gorontalo Province Based on Structural Equation Modeling: The Role of Organizational Commitment and Support, Human Resource Capacity, and Technology Readiness. *Jurnal Bina Praja, 18*(2), 261–274. https://doi.org/10.21787/jbp.18.2026.3344

Submitted: 2 June 2026
Accepted: 6 July 2026
Published: 3 August 2026

1. Introduction

The wave of change arising from the advancement of technology-driven industries has pushed the state apparatus to move away from administration based on manual procedures toward more digitalized governance. Whereas government activity once focused largely on internal administrative mechanisms, the new direction of governance emphasizes the delivery of services that citizens can access directly through digital technology. This shift has given rise to electronic-based government, or e-government—the use of information technology as a means of delivering public services that are more integrated, faster, and more accessible to the wider public (Prabowo, 2018).

Nursetiawan and Garis (2018) note that developments in information technology and the internet also affect regional governments, which must now provide information to the public via the internet. The legal framework for governmental digitalization was established by Presidential Regulation of the Republic of Indonesia No. 95 of 2018 on the Electronic-Based Government System. Article 1, paragraph 1, defines the Sistem Pemerintahan Berbasis Elektronik [Electronic-Based Government System] (SPBE) as the conduct of governmental activity that draws on information and communication technology to deliver services to SPBE users. The SPBE represents not merely a shift in the working medium from paper to computer screen but also an effort to build governance that is more open, more traceable, and more accountable to the public (Arwati & Latif, 2019). In modern administration, the use of technology is no longer regarded as an optional add-on but as an important component supporting efficiency, information transparency, and accountability in the conduct of regional government affairs.

A current feature of governmental data management is the diversity of data and of collection and processing methods that remain unstandardized (Maulidya & Rozikin, 2022). This condition calls for a platform capable of serving as an integrated repository of regional development data reaching down to the lowest level of government—rural and urban villages. Such a digital system is expected to support the entire sequence of regional development, from preparing planning documents and setting the direction of development to controlling program implementation and evaluating development as set out in the Rencana Pembangunan Jangka Panjang Daerah [Regional Long-Term Development Plan], the Rencana Pembangunan Jangka Menengah Daerah [Regional Medium-Term Development Plan], and the Rencana Kerja Pemerintah Daerah [Regional Government Work Plan] (M. I. Nasution & Nurwani, 2021).

The Sistem Informasi Pemerintahan Daerah [Regional Government Information System] (SIPD) is an innovation initiated by the Ministry of Home Affairs and further governed by the Regulation of the Minister of Home Affairs of the Republic of Indonesia No. 70 of 2019 on the Regional Government Information System. As set out in Article 1, paragraph 12, the SIPD is a system for managing regional development information, regional financial information, and other interconnected regional government information for use in conducting regional development.

Ruhana (2017) argues that the SIPD plays an important role in supporting the sequence of regional development planning, from preparing the initial draft and conducting development-planning deliberations to preparing the final draft and enacting regional development documents through regional regulations. In a different setting, D. A. Putri et al. (2024) find that implementing the SIPD in Ponorogo regency contributed to more accurate presentation of regional financial reports, although various technical constraints and limited post-implementation support

remained challenges. In Nagan Raya regency, a study by Ramadhan (2025) using the System Usability Scale obtained a mean score of 51.33, in the Marginal Low category, indicating that the system is usable but that its ease of use still requires further attention.

As a region continually working to strengthen its development, Gorontalo province faces various challenges in maximizing its use of the SIPD. Several years after its introduction, the system has not yet fully become the sole platform used across the entire process of preparing development programs and managing regional budgets. As a relatively young province that still depends substantially on fiscal transfers from the central government, Gorontalo province faces particular challenges in providing support for a technology-based system. Providing digital infrastructure, building the capacity of the apparatus, and maintaining the system require considerable budgetary support. In this situation, the successful implementation of the SIPD depends not only on political will but also on the regional government's ability to allocate resources appropriately.

Napu and Akbar (2025) observe that the implementation of the SIPD at the Badan Perencanaan Pembangunan Daerah [Regional Development Planning Agency] (Bappeda) of Gorontalo province has so far satisfied only the communication and disposition aspects, while the resource and bureaucratic-structure aspects still require strengthening. This finding is reinforced by Setiawan et al. (2023), who identify a need to improve the usability and feature consistency of the system through the ISO/IEC 25010 approach. This picture shows that the challenges of SIPD implementation arise both from the user side and from the system itself.

A prominent problem in the use of the SIPD in Gorontalo province concerns the readiness of the personnel responsible for operating the system. Using a governmental digital platform requires particular technical skills that are not always evenly distributed across all civil servants. When operational command of the application is not yet adequate, digital work processes tend to run more slowly and often require additional support. This condition was noted by the Regional Secretary of Gorontalo Province, Sofian Ibrahim, who stated that financial managers across various regional agencies still face a range of problems, so that technical guidance is needed to identify the sources of difficulty and to seek solutions (Nova & Zakir, 2024). This statement shows that the competence of the apparatus remains an important issue in the sustainable use of the SIPD.

Winidyaningrum and Rahmawati (2010) show that human resource capacity directly affects the reliability and timeliness of regional government financial reporting. Irafah et al. (2020) reinforce this finding: human resource competence had a direct, significant effect on the quality of regional financial reports, whereas the successful implementation of the regional financial information system, on its own, did not have such an effect—indicating that competent personnel, more than the system itself, shaped reporting quality. In the SIPD context, human resource capacity encompasses operators' technical ability to use the application, functional understanding of the integrated planning and budgeting workflow within the system, and the availability of continuous training. Other research confirms that human resource competence, together with leadership commitment and the accounting information system, directly affects the quality of financial management (L. E. Nasution et al., 2024). A study by Nakii et al. (2023) shows that the control processes for the SIPD have been carried out well at the Bappeda of Gorontalo province; however, constraints remain in procedural and facility controls, and not all parties

fully understand the system. Some staff or operators are still not fully effective in data entry because the web application is updated frequently.

Beyond the personnel dimension, organizational commitment and support extend beyond a mere statement of leadership endorsement. Allen and Meyer (1990) define it as the psychological force that binds an individual to the organization, including in the context of policy implementation. In their study in Gorontalo regency, Mada et al. (2017) show that the organizational commitment of village governments is a significant predictor of the accountability of financial management—a finding relevant for extrapolation to a larger context. Without genuine, measurable commitment, technical investment risks being wasted, because nothing ensures its continuity. Organizational commitment and support are thus among the key factors determining success. According to the technology–organization–environment (TOE) framework of Tornatzky et al. (1990), the organizational factor is one of three main elements influencing the adoption and success of information systems, alongside technology and the external environment. The SIPD is a system mandated by the Ministry of Home Affairs for regional governments; its success in each region, however, depends heavily on how seriously the regional organization itself manages the system. Without the support of leadership and regional agencies, the system does not run optimally even where the infrastructure exists. Many constraints in the SIPD stem not only from technology but from weak change management, insufficient leadership control over implementation, and suboptimal coordination among regional agencies (Nakii et al., 2023; Napu & Akbar, 2025).

Rahmawati et al. (2025) argue that the success of governmental digitalization is determined not by technological devices alone but through the interplay of technological, institutional, and human aspects. This finding aligns with the situation in Gorontalo province, which is in the process of strengthening its digital infrastructure. Patabang et al. (2024) add that technology anxiety can affect readiness for digital transformation in public institutions. Technology readiness, therefore, cannot be understood merely as the availability of computers or internet networks; it also relates to users' level of acceptance, confidence, and comfort when interacting with new technology.

Through the technology–organization–environment (TOE) framework, Tornatzky et al. (1990) explain that the technological context concerns the various technical resources available to support the use of a system. Tumija et al. (2023) note that the use of technology in governance can drive improvements in public service quality and speed an organization's response to community needs. In their study of e-government in a developing region, Rahmawati et al. (2025) find that technology readiness interacts with organizational and human factors in determining the success of adoption. Patabang et al. (2024) likewise find that technology anxiety can moderate readiness for digital transformation in public institutions, meaning that technology readiness is not only about the availability of tools but also about users' perception and acceptance of the technology.

Various earlier studies have examined the SIPD from different angles. Fitriani and Solikhin (2024) in Jambi province and Mustaqmah and Putri (2022) in Bukittinggi city report that the presence of the SIPD is associated with improved quality of regional financial accountability documents. On the other hand, Tumija and Erlambang (2023), Dewi et al. (2023), and A. N. Putri et al. (2025) describe various problems arising during SIPD use, ranging from uneven personnel skills and limited digital facilities to inconsistent working procedures across regional agencies. Although

these findings reveal both successes and constraints, an underexamined space remains: an explanation of why the level of success in using the SIPD can differ from one regional agency to another. This study aims to analyze the main factors affecting SIPD implementation in Gorontalo province and is expected to encourage the development of a more comprehensive evaluative approach to assessing organizational commitment, human resource capacity, and technology readiness in implementing digital systems in the government sector.

2. Methods

The analysis in this study uses a partial least squares structural equation modeling (PLS-SEM) approach to map the relationships among organizational, human resource, and technological-infrastructure factors and the level of SIPD implementation. The three exogenous latent variables are organizational commitment and support (X1), human resource capacity (X2), and technology readiness (X3), which together are directed at a single endogenous latent variable, SIPD implementation (Y1). PLS-SEM allows the simultaneous testing of relationships among variables with data that need not meet strict normality assumptions, so that the results provide not merely a list of significant factors but a clearer map of how SIPD implementation actually works in the field.

Table 1. Operational Definitions of the Variables

Variable	Definition	Indicators
Organizational Commitment and Support (X1)	Organizational commitment and support is one of the key factors determining success. According to the technology–organization–environment (TOE) framework of Tornatzky et al. (1990), the organizational context is one of the three main contexts influencing the adoption and success of information systems, alongside technology and the external environment.	1. Leadership support: direction, attention, and encouragement from agency leaders. 2. Policy and regulation: official rules that support SIPD use. 3. Resource allocation: provision of budget, infrastructure, and technical staff. 4. Training and development: training facilities enabling staff to use the SIPD. 5. Organizational culture: a work environment that encourages SIPD use.
Human Resource Capacity (X2)	Human capital theory (Becker, 1993) holds that improvements in human resources' knowledge, skills, and experience raise overall organizational productivity, including in the management of information systems.	Based on human capital theory, the indicators of human resource capacity are: 1. Knowledge: understanding of the SIPD, regulations, and procedures. 2. Skill: technical ability to operate the SIPD. 3. Ability: analytical capacity, adaptability, and problem-solving in using the SIPD. 4. Experience: background and hands-on practice in using information systems. 5. Attitude and motivation: willingness to learn and develop in support of SIPD implementation.
Technology Readiness (X3)	The technology–organization–environment (TOE) framework of Tornatzky et al. (1990) proposes that the adoption of an innovation or technology in an organization is influenced by three main contexts: technology (characteristics of the technology), organization (internal organizational characteristics), and environment (external factors).	1. Technological infrastructure and devices: availability of computers, internet networks, and servers. 2. Availability of applications and supporting software: completeness of SIPD modules and system updates. 3. System reliability and security: a secure system, protected data, and infrequent errors. 4. Ease of access and use: user-friendly and accessible at any time and from any location. 5. Technical support: an IT team or technical support for maintenance.
SIPD Implementation (Y1)	The DeLone and McLean information systems (IS) success model is used to evaluate the factors affecting the success of an information system from the user's perspective (Delone & McLean, 2003).	1. System quality: reliability and security of the SIPD; ease of access and user-friendliness; system response speed. 2. Information quality: accuracy of financial and budget data; completeness of the reports produced; relevance of information for decision-making. 3. Service quality: technical support from the SIPD IT team; rapid response to problems; availability of user training. 4. Use/intention to use: frequency of SIPD use in tasks; compliance in using the SIPD according to procedure. 5. User satisfaction: satisfaction with SIPD performance; satisfaction with ease of use.

Source: *developed by the authors (2026).*

The study was conducted in Gorontalo with SIPD administrators distributed across various regional agencies. A total of 125 participants were drawn from 22 offices, 6 agencies, and 6 bureaus within the Regional Secretariat, based on the organizational structure established in the Governor of Gorontalo Regulation No. 38 of 2022 on the Organization and Work Procedures of the Regional Government. Field data collection and processing were carried out over three months, from December 2025 to February 2026. Because each regional agency has different tasks and workloads, respondents' views cannot be treated as uniform. Differences in experience across regional agencies provide a more realistic picture of how the SIPD actually operates in practice rather than only in formal documentation. As those who most often deal directly with the system, respondents provide assessments of its ease of use, constraints, and benefits that tend to be more candid than official reports. The questionnaires distributed were returned and completed satisfactorily for subsequent analysis.

The empirical model of this study can be formulated using the SmartPLS scheme shown in Figure 1. The measurement model and structural model were evaluated as follows.

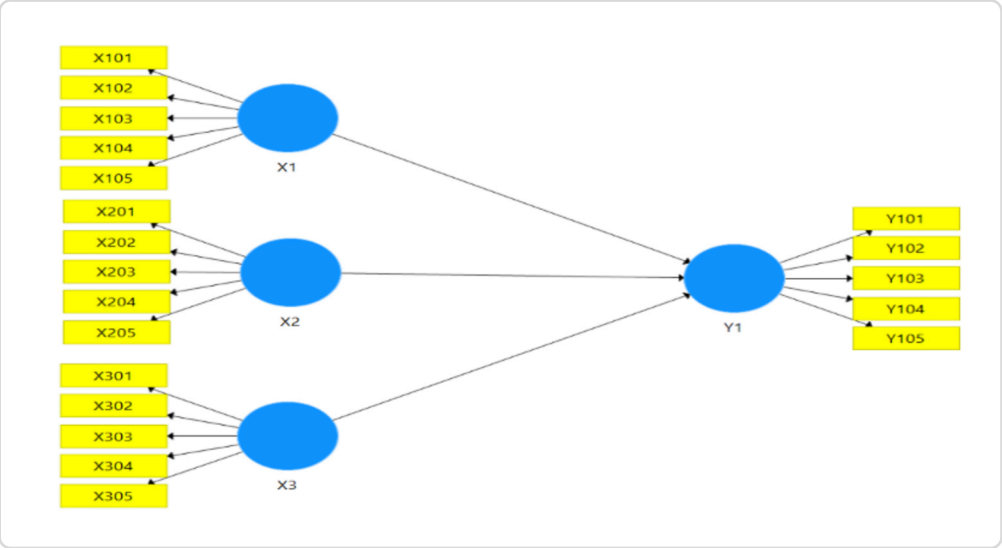

Figure 1. SmartPLS 4.0 Path Diagram

a. Measurement Model (Outer Model)

The measurement model specifies the relationships between latent variables—both endogenous and exogenous—and their indicators or manifest variables. An exogenous variable is one whose variability is determined by causes outside the model; that is, a determining or independent variable. The measurement model is evaluated as follows: (1) Convergent validity indicates the validity of the measurement indicators and can be seen through the loading factor on the endogenous and exogenous variables; the recommended value is greater than 0.70 in research models that are already well established. (2) Discriminant validity, based on cross-loading values, is used to assess the discriminant properties of a construct; a construct's discriminant adequacy is established when the loading on the intended construct exceeds the loadings on the other constructs. (3) Cronbach's alpha assesses the reliability of a construct by measuring the internal consistency of its indicators, with a minimum expected value of 0.70.

b. Structural Model (Inner Model)

The structural model shows the relationships among the latent variables and is used to ensure that the constructed model is robust and accurate. Evaluating the structural model provides an assessment of the model's explanatory power and overall accuracy.

c. Hypothesis Testing (t-test)

Hypothesis testing using the bootstrapping procedure produces a t-statistic for each path used to test the hypotheses. This t-statistic is compared with the critical t-value. This study uses a 95% confidence level, so that the significance level (α) = 0.05 and the critical t-value is 1.96. If the t-statistic is smaller than the critical t-value (t-statistic < 1.96), H0 is accepted and Ha is rejected. If the t-statistic is greater than or equal to the critical t-value (t-statistic ≥ 1.96), H0 is rejected and Ha is accepted. The hypotheses tested are:

H1: Organizational commitment and support affect SIPD implementation.

H2: Human resource capacity affects SIPD implementation.

H3: Technology readiness affects SIPD implementation.

Thus, this SmartPLS-based method can explain the extent to which organizational commitment and support (X1), human resource capacity (X2), and technology readiness (X3) affect SIPD implementation (Y1).

3. Results and Discussion

3.1. Outer Model (Measurement Model) Results

Evaluation of the outer model assesses the extent to which the indicators used can represent the latent construct being measured. Outer loading reflects the strength of the relationship between each indicator and its latent construct. The generally accepted threshold in PLS-SEM is 0.70; indicators below this threshold usually need to be re-evaluated or eliminated.

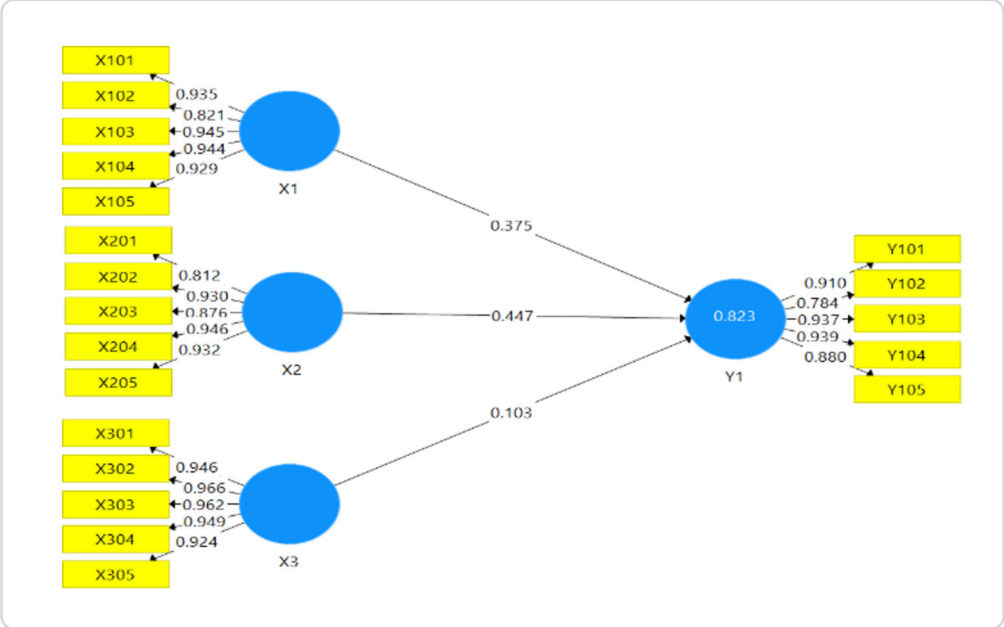

Figure 2. Goodness of Fit of the Outer Model, PLS-SEM Algorithm

The measurement-model results show that all indicators have outer loadings above 0.70, and most reach above 0.90, indicating that the indicators represent the latent variables strongly and consistently. This shows that the instrument used meets the criterion of convergent validity, so that each indicator can empirically explain the condition being measured.

For organizational commitment and support (X1), values range from 0.821 to 0.945, with X103 (periodic evaluation of SIPD use) the highest and X102 (internal policy) the lowest, though still in the very good category. This indicates that the evaluative dimension and leadership support are most dominant in forming the construct of organizational commitment toward SIPD implementation.

For human resource capacity (X2), outer loadings range from 0.812 to 0.946, with X204 (prior experience using the system) the strongest indicator (0.946). This confirms that practical experience is more decisive than formal regulatory knowledge (X201 = 0.812) in forming human resource capacity. Although there is minor variation across indicators, all values remain valid and reliable, confirming that individual capacity has a solid structure for explaining readiness to use the SIPD.

Technology readiness (X3) shows very high and homogeneous values, ranging from 0.924 to 0.966, with X302 (module completeness) the strongest indicator (0.966). For SIPD implementation (Y1), values range from 0.784 to 0.939, with Y104 (use of the SIPD as the primary system) and Y103 (reporting transparency) the dominant indicators, while the more-efficient-coordination indicator (Y102) has the lowest value but remains above the required minimum. This shows that all indicators can explain the level of SIPD implementation.

Table 2. Outer Loading t-Statistics

Indicator	Original Sample (O)	Sample Mean (M)	STDEV	t-Statistic	p-Value
X101 – X1	0.935	0.933	0.019	48.841	0.000
X102 – X1	0.821	0.818	0.045	18.348	0.000
X103 – X1	0.945	0.943	0.015	64.811	0.000
X104 – X1	0.944	0.942	0.013	73.870	0.000
X105 – X1	0.929	0.926	0.019	47.687	0.000
X201 – X2	0.812	0.807	0.041	19.724	0.000
X202 – X2	0.930	0.928	0.021	44.358	0.000
X203 – X2	0.876	0.874	0.027	31.879	0.000
X204 – X2	0.946	0.945	0.012	75.728	0.000
X205 – X2	0.932	0.930	0.016	57.133	0.000
X301 – X3	0.946	0.943	0.017	55.059	0.000
X302 – X3	0.966	0.965	0.011	86.138	0.000
X303 – X3	0.962	0.960	0.011	83.797	0.000
X304 – X3	0.949	0.946	0.016	58.126	0.000
X305 – X3	0.924	0.921	0.024	38.876	0.000
Y101 – Y1	0.910	0.908	0.018	50.431	0.000
Y102 – Y1	0.784	0.782	0.040	19.599	0.000
Y103 – Y1	0.937	0.936	0.014	68.676	0.000
Y104 – Y1	0.939	0.937	0.013	72.373	0.000
Y105 – Y1	0.880	0.876	0.031	28.745	0.000

Source: *primary data processed by the authors (2026).*

The outer-loading results indicate that no indicator needs to be eliminated. This shows that the research instrument was well designed and meets the validity and reliability criteria required in PLS-SEM. Interpretation of the relationships among variables can therefore proceed with high confidence and can accurately represent the empirical conditions of SIPD implementation.

Significance testing of the outer loadings was carried out through bootstrapping, producing a t-statistic and p-value for each indicator. With the critical thresholds of $t > 1.96$ and $p < 0.05$ at the 5% significance level, all indicators show t-statistics far exceeding the threshold—most in the range of approximately 18 to 86. This shows that the model meets all criteria for convergent validity and indicator significance. No indicator has a t-value below the critical threshold, so no model re-specification is required. This indicates that the instrument was very well designed from the outset and reinforces the high outer-loading values reported earlier. The measurement model in this study can thus be considered robust and suitable for structural analysis.

Table 3. Construct Validity and Reliability

Variable	Cronbach's Alpha	rho_A	Composite Reliability	AVE
X1	0.951	0.957	0.963	0.839
X2	0.941	0.948	0.955	0.811
X3	0.973	0.973	0.979	0.901
Y1	0.935	0.953	0.951	0.795

Source: *primary data processed by the authors (2026). AVE = average variance extracted.*

All constructs in the model meet every criterion well. Cronbach's alpha ranges from 0.935 (Y1) to 0.973 (X3), while composite reliability ranges from 0.951 (Y1) to 0.979 (X3). Both measures indicate very high internal consistency for each construct. There is no significant difference among constructs in measurement quality, so all variables are methodologically sound. This provides a strong basis for proceeding to the structural model.

3.2. Inner Model (Structural Model) Results

Table 4. Coefficient of Determination (R-Square)

Variable	R-Square	Adjusted R-Square
Y1 (SIPD implementation)	0.823	0.819

Source: *primary data processed by the authors (2026).*

The R-square of 0.823 for SIPD implementation (Y1) indicates that 82.3% of the variance in SIPD implementation is explained jointly by organizational commitment and support (X1), human resource capacity (X2), and technology readiness (X3). This falls in the very strong category. The adjusted R-square of 0.819 differs only slightly from R-square, indicating that the model does not suffer from overfitting. That is, the three variables make a real and relevant contribution to explaining the variance in SIPD implementation rather than artificially inflating R-square. The remaining 17.7% is likely influenced by factors outside the model.

The model-fit results in Table 5 show a reasonably good correspondence between the model and the empirical data. The values for the saturated and estimated models are identical, indicating a stable model with no structural distortion in the estimation process. The SRMR of 0.066 is below the 0.08 threshold and thus falls in the good-fit category in PLS-SEM; the difference between the observed and model-predicted

Table 5. Model Fit

Fit Index	Saturated Model	Estimated Model
SRMR	0.066	0.066
d_ULS	0.922	0.922
d_G	0.956	0.956
Chi-square	615.305	615.305
NFI	0.849	0.849

Source: primary data processed by the authors (2026). SRMR = standardized root mean square residual; NFI = normed fit index.

covariance matrices is small. The d_ULS (0.922) and d_G (0.956) values indicate the distance between the empirical and model matrices; although they lack a standard cut-off like the SRMR, both indicate an acceptable level of discrepancy. The NFI of 0.849 approaches the good-fit category (> 0.90), showing that the model is reasonably able to explain the relationships among variables without significant modification. The chi-square of 615.305 appears large but is fairly typical in PLS-SEM; a large sample tends to raise the chi-square, so its interpretation should consider other indices, with the already-good SRMR serving as the more relevant reference. Overall, the model is considered to have a reasonably good fit and is suitable for analysis.

These fit results also show that the constructs used are consistent with the empirical conditions of SIPD implementation in Gorontalo province. The model is not only statistically valid but also contextually relevant—important because, in public-policy research, correspondence with field realities is crucial. With a fitting model, the resulting policy recommendations become more reliable.

The inner-model results show the t-statistics used to test the significance of the effects among latent variables. Hypothesis testing in the inner model was carried out using bootstrapping, producing path-coefficient estimates together with t-statistics and p-values. A relationship is considered significant when $t > 1.96$ and $p < 0.05$. The results are presented in Table 6.

Table 6. Path Coefficients and Hypothesis Testing

Relationship	Original Sample (O)	Sample Mean (M)	STDEV	t-Statistic	p-Value
X1 → Y1	0.375	0.365	0.116	3.246	0.001
X2 → Y1	0.447	0.456	0.133	3.365	0.001
X3 → Y1	0.103	0.103	0.139	0.745	0.457

Source: primary data processed by the authors (2026).

The first hypothesis (H1) posited that organizational commitment and support (X1) affect SIPD implementation (Y1). The path coefficient was 0.375, with a t-statistic of 3.246 and a p-value of 0.001. Because $t > 1.96$ and $p < 0.05$, H1 was supported. The effect is positive and statistically significant, meaning that a higher level of organizational commitment and support is associated with a higher level of SIPD implementation. The bootstrap mean (M = 0.365), close to the original value, indicates a stable estimate.

The second hypothesis (H2) posited that human resource capacity (X2) affects SIPD implementation (Y1). The path coefficient was 0.447—the highest among all variables—with a t-statistic of 3.365 and a p-value of 0.001. H2 was supported. This finding indicates that human resources are the most dominant factor associated with successful SIPD implementation; without competent and adaptable personnel, the system is unlikely to run optimally even where infrastructure is available.

The third hypothesis (H3) posited that technology readiness (X3) affects SIPD implementation (Y1). The path coefficient was 0.103, with a t-statistic of 0.745 and

a p-value of 0.457. Because t < 1.96 and p > 0.05, H3 was not supported. Although the direction of the association remained positive, this variable's contribution was not strong enough to explain variation in SIPD implementation significantly. Technology appears to act as a necessary condition rather than a driving factor: technological conditions in Gorontalo province seem relatively adequate and thus no longer a differentiating variable. This indicates that technology is not a dominant factor in this model.

The model contains no mediating variable, so the total effect is identical to the direct effect. Even so, analyzing total effects remains useful for confirming the consistency and stability of the estimates. The total-effect results are fully consistent with the earlier path-coefficient analysis: human resource capacity (X2) remains the strongest factor (0.447; t = 3.365; p = 0.001), followed by organizational commitment and support (X1) (0.375; t = 3.246; p = 0.001), with technology readiness (X3) non-significant (0.103; t = 0.745; p = 0.457).

Taken together, the three tested factors are ranked from strongest to weakest as human resource capacity, organizational commitment and support, and technology readiness. The finding that human resource capacity is most strongly associated with SIPD implementation is consistent with human capital theory (Becker, 1993) and with the findings of Winidyaningrum and Rahmawati (2010) and Irafah et al. (2020) that the competence of personnel, more than the mere presence of a system, shapes the quality of financial reporting. Personnel who understand the system, are skilled in operating it, and are confident in its use are most closely associated with the quality of implementation, which helps explain why two regions running the same system can differ markedly in how well it works.

Organizational commitment and support rank second and remain significantly associated with implementation, reinforcing the organizational dimension of the technology–organization–environment framework (Tornatzky et al., 1990) and Mada et al.'s (2017) evidence that organizational commitment predicts accountability in local financial management. The pattern indicates that individual capability alone does not appear sufficient for optimal use of the system: leadership direction, a work structure that accommodates the system, and a change-receptive culture appear to underpin the institutional footing on which implementation depends.

Technology readiness, often assumed to be the decisive factor in adopting an information system, was not significantly associated with implementation here. Read against the technology context of the same framework and against Rahmawati et al. (2025), who find that readiness operates jointly with organizational and human factors, the result is best interpreted as context-specific rather than as evidence that infrastructure is irrelevant. Technological conditions among respondents in Gorontalo province appear to have been relatively even at the time of the study, so the variable no longer differentiated between stronger and weaker levels of implementation. What differentiates implementation quality across units and individuals in this setting is the human and organizational factor rather than the availability of devices.

4. Conclusion

This study set out to identify the main factors associated with SIPD implementation in Gorontalo province. Using PLS-SEM, it finds that implementation is associated most strongly with human resource capacity, next with organizational commitment and support, and not significantly with technology readiness. Its contribution is an integrated, evidence-based way of evaluating implementation that weighs human,

organizational, and technological factors together rather than treating digital transformation as primarily a matter of infrastructure; on this evidence, transformation in the province is more human- and organization-driven than technology-driven.

Practically, this shifts the province's priorities away from infrastructure investment alone and toward the people and institutions that operate the system. Strengthening human resource capacity is the primary step, and it is unlikely to be achieved through occasional training; it calls for a structured, continuing mechanism for transferring knowledge from experienced to newer staff. Sustaining that capacity, in turn, depends on visible institutional commitment—leadership direction, work structures that accommodate the system, and a culture receptive to change.

These findings should be read within the study's limits: the design is cross-sectional and so supports statements of association rather than causation; the evidence is drawn from a single province at one point in time, which bounds its generalizability; and the model leaves roughly 17.7% of the variance in implementation unexplained, pointing to determinants beyond the three examined. Future research could test the relationships longitudinally, extend the model to other regions, and incorporate additional factors—such as change management or inter-agency coordination—to account for the remaining variance.

References

Allen, N. J., & Meyer, J. P. (1990). The Measurement and Antecedents of Affective, Continuance and Normative Commitment to the Organization. *Journal of Occupational Psychology, 63*(1), 1–18. https://doi.org/10.1111/j.2044-8325.1990.tb00506.x

Arwati, D., & Latif, D. V. (2019). Tingkat Kepercayaan Masyarakat terhadap Transparansi Keuangan dalam E Government Kota Bandung [Public Trust in Financial Transparency in the E-Government of Bandung City]. *JBMP (Jurnal Bisnis, Manajemen dan Perbankan), 5*(2), 31–39. https://doi.org/10.21070/jbmp.v5i2.2736

Becker, G. S. (1993). *Human Capital*. University of Chicago Press. https://doi.org/10.7208/chicago/9780226041223.001.0001

Delone, W. H., & McLean, E. R. (2003). The DeLone and McLean Model of Information Systems Success: A Ten-Year Update. *Journal of Management Information Systems, 19*(4), 9–30. https://doi.org/10.1080/07421222.2003.11045748

Dewi, N., Irfansyah, & Muhammad, Z. (2023). Penerapan Sistem Informasi Pemerintahan Daerah (SIPD) Pada Dinas Tanaman Pangan, Hortikultura dan Perkebunanan (DTPHP) Kabupaten Donggala [Implementation of the Regional Government Information System (SIPD) at the Department of Food Crops, Horticulture and Plantation (DTPHP) Donggala Regency]. *Jurnal Kolaboratif Sains, 6*(7), 887–894. https://doi.org/10.56338/JKS.V6I7.3946

Fitriani, L., & Solikhin, A. (2024). Pengaruh Implementasi Sistem Informasi Pemerintah Daerah terhadap Pengelolaan Keuangan Daerah Pemerintah Provinsi Jambi dan Dampaknya terhadap Kualitas Laporan Keuangan Pemerintah Daerah yang Dimoderasi oleh Teknologi Informasi [The Effect of Regional Government Information System Implementation on the Regional Financial Management of the Jambi Provincial Government and Its Impact on Regional Government Financial Report Quality, Moderated by Information Technology]. *Jurnal Manajemen Terapan dan Keuangan, 13*(5), 1548–1561. https://doi.org/10.22437/jmk.v13i05.32328

Irafah, S., Sari, E. N., & Muhyarsyah. (2020). Pengaruh Kompetensi Sumber Daya Manusia, Peran Internal Audit, dan Kesuksesan Penerapan Sistem Informasi Keuangan Daerah terhadap Kualitas Laporan Keuangan [The Effect of Human Resource Competence, the Internal Audit Role, and Successful Regional Financial Information System Implementation on Financial Report Quality]. *Jurnal Riset Akuntansi dan Keuangan, 8*(2), 337–348. https://doi.org/10.17509/jrak.v8i2.21775

Mada, S., Kalangi, L., & Gamaliel, H. (2017). Pengaruh Kompetensi Aparat Pengelola Dana Desa, Komitmen Organisasi Pemerintah Desa, dan Partisipasi Masyarakat terhadap Akuntabilitas Pengelolaan Dana Desa di Kabupaten Gorontalo [The Effect of the Competence of Village Fund Managers, Village Government Organizational Commitment, and Community Participation on the Accountability of Village Fund Management in Gorontalo Regency]. *Jurnal Riset Akuntansi dan Auditing Goodwill, 8*(2). https://doi.org/10.35800/jjs.v8i2.17199

Maulidya, R., & Rozikin, M. (2022). Analisis Retrospektif Kebijakan Satu Data Indonesia [A Retrospective Analysis of the One Data Indonesia Policy]. *Dinamika, 9*(2), 273–287. https://doi.org/10.25157/dak.v9i2.7884

Mustaqmah, S. A., & Putri, D. P. (2022). Pengaruh Kapasitas Sumber Daya Manusia, Pemanfaatan Sistem Informasi Pemerintah Daerah (SIPD) dan Sistem Informasi Manajemen Daerah (SIMD) terhadap Kualitas Laporan Keuangan Pemerintah Daerah Kota Bukittinggi [The Effect of Human Resource Capacity and the Use of the Regional Government Information System (SIPD) and the Regional Management Information System (SIMD) on the Financial Report Quality of the Bukittinggi City Government]. *Jurnal Menara Ekonomi: Penelitian dan Kajian Ilmiah Bidang Ekonomi, 8*(2), 181–197. https://doi.org/10.31869/me.v8i2.3738

Nakii, S. D., Isa, R., & Nani, Y. N. (2023). Penerapan Sistem Informasi Pemerintahan Daerah dalam Pelaksanaan Perencanaan Pembangunan [Implementation of the Regional Government Information System in Development Planning]. *Ulil Albab, 2*(8), 3795–3805. https://doi.org/10.56799/jim.v2i8.2049

Napu, F., & Akbar, B. (2025). *Implementasi Sistem Informasi Pemerintah Daerah (SIPD) dalam Perencanaan dan Penganggaran pada Badan Perencanaan dan Pembangunan Daerah Kota Gorontalo [Implementation of the Regional Government Information System (SIPD) in Planning and Budgeting at the Regional Development Planning Agency of Gorontalo City]* [Diploma Thesis, Institut Pemerintahan Dalam Negeri]. http://eprints.ipdn.ac.id/id/eprint/21033

Nasution, L. E., Sari, E. N., & Irfan. (2024). Pengaruh Kompetensi SDM dan Komitmen Pemimpin terhadap Pengelolaan Dana BOS dengan SIA Sebagai Variabel Intervening [The Effect of Human Resource Competence and Leadership Commitment on the Management of BOS Funds With the Accounting Information System as an Intervening Variable]. *Jurnal Ekonomika dan Bisnis, 4*(6), 1535–1543. https://doi.org/10.47233/jebs.v4i6.2186

Nasution, M. I., & Nurwani. (2021). Analisis Penerapan Sistem Informasi Pemerintah Daerah (SIPD) pada Badan Pengelola Keuangan dan Aset Daerah (BPKAD) Kota Medan [An Analysis of the Implementation of the Regional Government Information System (SIPD) at the Regional Financial and Asset Management Agency (BPKAD) of Medan City]. *Jurnal Akuntansi dan Keuangan, 9*(2), 109–116. https://doi.org/10.29103/jak.v9i2.4577

Nova, & Zakir. (2024, January 24). *Pemprov Gorontalo dan Pusdatin Kemendagri Gelar Bimtek Aplikasi SIPD-RI [Gorontalo Provincial Government and the Ministry of Home Affairs' Data and Information Systems Center Hold Technical Guidance on the SIPD-RI Application]*. Berita Gorontalo. https://berita.gorontaloprov.go.id/2024/01/24/pemprov-gorontalo-dan-pusdatin-kemendagri-gelar-bimtek-aplikasi-sipd-ri/

Nursetiawan, I., & Garis, R. R. (2018). Analisis Sistem Informasi Manajemen Pemerintah Daerah Kabupaten Ciamis dalam Meningkatkan Pendapatan Asli Daerah dari Sektor Pariwisata [An Analysis of the Regional Government Management Information System of Ciamis Regency in Increasing Locally Generated Revenue From Tourism]. *Moderat, 4*(3), 151–162. https://doi.org/10.25147/MODERAT.V4I3.2008

Patabang, M., Inan, D. I., Matualage, A., & Indra, M. (2024). The Moderation Effect of Technology Anxiety on Digital Transformation Readiness in Public Universities: An Organizational Readiness Approach. *Jurnal Sistem Informasi, 10*(2), 59–70. https://doi.org/10.19109/jusifo.v10i2.23969

Prabowo, G. A. (2018). Pengelolaan Konten Website Pemerintah Kota Yogyakarta Sebagai Media Pelayanan Publik [Managing the Yogyakarta City Government Website Content as a Public Service Medium]. *Dialogia, 16*(1), 118–137. https://doi.org/10.21154/dialogia.v16i1.1496

Putri, A. N., Dewi, A. I. M., Rizkia, M. M., Jailani, M. A., & Hidayat, R. (2025). Analisis Efektivitas Sistem Informasi Pemerintahan Daerah (SIPD) dalam Penyusunan RKPD di Bappeda Kota Mataram [An Analysis of the Effectiveness of the Regional Government Information System (SIPD) in Preparing the RKPD at the Regional Development Planning Agency (Bappeda) of Mataram City]. *Otonomi, 25*(2), 247–256. https://doi.org/10.32503/OTONOMI.V25I2.7430

Putri, D. A., Alifah, T. N., & Purwaningrum, T. (2024). Evaluasi Penerapan Sistem Informasi Pemerintahan Daerah (SIPD) dalam Pelaksanaan Laporan Keuangan pada Dinas Kesehatan Kabupaten Ponorogo [An Evaluation of the Implementation of the Regional Government Information System (SIPD) in Financial Reporting at the Ponorogo Regency Health Office]. *Journal of Community Dedication, 3*(4), 110–118. https://felifa.net/index.php/JURCOMDED/article/view/728

Rahmawati, N. F., Inan, D. I., Juita, R., & Indra, M. (2025). E-Government Service for Driving Digital Creative Economy in Developing Region: Perspective of Technology Readiness Index and PLS-SEM. *Applied Information System and Management, 8*(1), 79–88. https://doi.org/10.15408/aism.v8i1.45514

Ramadhan, R. (2025). Analisis Keberhasilan Penerapan Sistem Informasi Pemerintah Daerah (SIPD) Menggunakan Metode System Usability Scale (SUS) di Pemerintah Kabupaten Nagan Raya [Analysis of the Success of Implementing the Regional Government Information System (SIPD) Using the System Usability Scale (SUS) Method in the Nagan Raya Regency Government]. *Inovasi Pembangunan, 13*(3). https://doi.org/10.35450/JIP.V13I03.1372

Ruhana, F. (2017). Pemanfaatan Sistem Informasi Pembangunan Daerah dalam Mendukung Perencanaan Pembangunan Daerah di Indonesia [The Use of the Regional Development Information System in Supporting Regional Development Planning in Indonesia]. *Jurnal Manajemen Pembangunan, 4*(2). http://eprints.ipdn.ac.id/id/eprint/5471

Setiawan, Z., Amali, L. N., & Polin, M. (2023). Analisis Evaluasi Kualitas Sistem Informasi Pemerintahan Daerah (SIPD) Menggunakan ISO/IEC 25010 di BAPPEDA Provinsi Gorontalo [An Evaluation of the Quality of the Regional Government Information System (SIPD) Using ISO/IEC 25010 at Bappeda, Gorontalo Province]. *Diffusion, 3*(1), 142–152. https://doi.org/10.37031/DIFFUSION.V3I1.18310

Tornatzky, L. G., Fleischer, M., & Chakrabarti, A. K. (1990). *The Processes of Technological Innovation*. Lexington Books.

Tumija, & Erlambang, P. A. (2023). Implementasi Sistem Informasi Pemerintahan Daerah (SIPD) dalam Perencanaan Anggaran Daerah Kabupaten Ogan Komering Ulu Provinsi Sumatera Selatan [Implementation of the Regional Government Information System (SIPD) in Regional Budget Planning of Ogan Komering Ulu Regency, South Sumatra Province]. *Jurnal Media Birokrasi, 5*(2), 155–169. https://doi.org/10.33701/jmb.v5i2.3696

Tumija, Hendra, A., & Sinurat, M. (2023). Penerapan Sistem Informasi Pemerintahan Daerah (SIPD) dalam Pengelolaan Keuangan Daerah pada Badan Pengelola Keuangan dan Aset Daerah (BPKAD) Kota Semarang Provinsi Jawa Tengah [Implementation of the Regional Government Information System (SIPD) in regional financial management at the Regional Financial and Asset Management Agency (BPKAD) of Semarang City, Central Java Province]. *Jurnal Media Birokrasi, 5*(1), 79–91. https://doi.org/10.33701/JMB.V5I1.3389

Winidyaningrum, C., & Rahmawati. (2010). Pengaruh Sumber Daya Manusia dan Pemanfaatan Teknologi Informasi terhadap Keterandalan dan Ketepatwaktuan Pelaporan Keuangan Pemerintah Daerah dengan Variabel Intervening Pengendalian Intern Akuntansi: Studi Empiris di Pemda Subosukawonosraten. *Simposium Nasional Akuntansi XIII*.