

## FORMATION OF HYBRID WORK PRACTICES IN SIPD IMPLEMENTATION: A CASE STUDY OF A LOCAL GOVERNMENT

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### *Abstract*

*Digital transformation in the public sector does not necessarily replace existing organizational practices with fully digital processes. The implementation of integrated digital platforms may instead require actors to combine digital systems with organizational resources and established ways of working. This study aims to explain how hybrid work practices are formed in the implementation of the Regional Government Information System within a local government. A qualitative case study was conducted using semi-structured interviews with eight informants, observations, and document analysis. Data were analyzed using reflexive thematic analysis with an abductive orientation, drawing on Structuration Theory and the Technology-in-Practice perspective. The findings show that the Regional Government Information System has become the main digital infrastructure through which access, authority, work sequences, and monitoring are organized. However, work completion continues to involve spreadsheets, worksheets, supporting documents, external data, reconciliation mechanisms, and complementary applications. These resources perform specific functions, including calculation, preparation, validation, control, reconciliation, and further processing of system-generated information. Coordination, learning, and adaptation enable actors to connect these resources with the digital platform, while repeated enactment makes particular configurations of work relatively stable. The study contributes by showing that hybridization occurs not simply through the simultaneous use of multiple tools, but through the functional integration of different resources within a sequence of work completion. The findings suggest that digital transformation initiatives should recognize complementary organizational practices and resources when designing implementation, support, and governance mechanisms.*

**Keywords:** *public sector digitalization; technology-in-practice; organizational adaptation; complementary resources; digital work practices*



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## 1. Introduction

Digital transformation has changed how public organizations manage processes, information, and work (Haug et al., 2024; Moser-Plautz & Schmidhuber, 2023). In the public sector, digitalization is not simply a matter of replacing manual procedures with digital technologies. It can also reshape how tasks are organized, coordinated, monitored, and connected across organizational functions (Gritt et al., 2024; Haug et al., 2024). Yet, the introduction of a digital system does not necessarily produce uniform changes in work practices. Digital transformation may develop gradually as organizations adjust technologies to existing work arrangements, resources, and organizational requirements. Understanding digital transformation therefore requires attention to how technologies become part of everyday organizational work rather than focusing only on whether a system has been adopted.

This issue is particularly relevant to the implementation of the Regional Government Information System (SIPD) in Indonesia. SIPD was developed as an information system for local governments and provides an integrated digital platform for managing government information. Its regulatory foundation includes Minister of Home Affairs Regulation No. 70 of 2019, which establishes the framework for the management of regional government information. In regional financial management, SIPD covers interconnected processes including planning, budgeting, financial administration, accounting, reporting, and accountability (Ministry of Home Affairs, 2019). Its implementation therefore introduces not only a new digital platform but also particular arrangements of access, authority, work stages, and system-based processing into local government work.

Previous studies have reported potential benefits of SIPD, including improved information integration, transparency, and support for local government management. At the same time, its implementation has been associated with problems such as limited integration, input errors, system instability, user adjustment, and the continued use of supporting resources or complementary systems (Hersadjati et al., 2025; Nareswari & Prayana, 2026; Septiani & Isnawaty, 2024; Teken & Romarina, 2024). Recent research has also pointed to the implications of centralized system architecture and limited human resource capacity for SIPD utilization (Fatoni, 2026; Nareswari & Prayana, 2026). These findings indicate that SIPD implementation may involve both the central digital platform

and resources beyond the platform. However, existing studies provide limited explanation of how these resources are functionally connected to SIPD within particular work activities and how such configurations develop into recurring patterns of practice.

The issue can be observed in the local government examined in this study. SIPD has become the main digital platform through which financial management activities are organized, including planning, budgeting, administration, and reporting. Nevertheless, employees continue to use Excel spreadsheets, worksheets, supporting documents, external data, reconciliation procedures, and complementary applications in different parts of their work. These resources are used not only when SIPD encounters technical problems but also during routine work for calculation, preparation, validation, control, reconciliation, and further processing of information. Their continued use therefore cannot be explained simply as leftover manual work or as evidence that digitalization has failed. It raises a broader question of how a centrally managed digital platform becomes embedded in organizational work while other resources continue to perform specific functions.

This question is important because the use of several resources within one work process does not necessarily mean that those resources are independent or competing systems. An employee may prepare or calculate information using Excel, enter the required information into SIPD, and subsequently use supporting records or external data to check, reconcile, or further process the resulting information. The resources are thus connected through the sequence of work, even though they perform different functions. Such arrangements draw attention to the relationship between digital infrastructure and everyday work practices, particularly when organizational actors have to work within system arrangements that they cannot fully modify.

Structuration Theory provides a useful perspective for examining this relationship (Giddens, 1984). The theory views structure in terms of rules and resources that shape social action while being reproduced through practice. In this study, SIPD is not treated as structure itself. Rather, it is understood as a digital infrastructure through which particular rules, authority arrangements, workflows, and resources are operationalized. User access, authorization, process stages, and validation requirements shape the conditions under which employees perform their work. At the same time, actors use their knowledge and available organizational resources to organize tasks, coordinate with others, and respond to work requirements. Their agency is therefore exercised within organizational and technological conditions that provide opportunities for adjustment but also place boundaries on what actors can change.

This perspective is complemented by Orlikowski (2000) Technology-in-Practice perspective, which emphasizes that technologies acquire practical meaning through their use in particular organizational contexts. The same technology may be enacted differently depending on actors' objectives, knowledge, available resources, and work situations. This perspective helps explain why the formal design of SIPD does not necessarily

correspond completely to the way work is performed in practice. While Structuration Theory draws attention to the relationship between structural conditions and actor agency, Technology-in-Practice helps explain how those conditions are enacted through particular configurations of technology, actors, and organizational resources. Using the two perspectives together provides a basis for examining both the conditions established by SIPD and the ways in which employees incorporate the platform into actual work.

Research on digital transformation has increasingly examined changes in organizational routines, coordination, and work practices (Almatrodi & Skoumpopoulou, 2023; Annosi et al., 2023; Haug et al., 2024). SIPD research, however, has largely emphasized effectiveness, efficiency, transparency, accountability, human resource capacity, system integration, and technical constraints. More recent studies have begun to identify the persistence of manual practices and the use of multiple or complementary systems (Fatoni, 2026; Nareswari & Prayana, 2026; Sulistyowati, 2025). These studies provide important evidence that digitalization does not necessarily eliminate other work resources, but they provide limited explanation of the process through which actors connect those resources with SIPD and reproduce relatively stable configurations of work. For example, Sulistyowati (2025) found that 74% of the local governments included in the study continued to use more than one unintegrated financial information system. This finding demonstrates the persistence of multiple systems, but it does not explain how actors use those systems in relation to SIPD when carrying out specific work activities.

A related conceptual issue concerns how to understand practices that involve both SIPD and resources outside the platform. Such practices should not automatically be classified as manual workarounds. Manual practice refers to work conducted without meaningful integration with the digital system, whereas a workaround generally refers to an action taken to overcome a particular system problem. A complementary resource, such as an Excel worksheet or supporting document, may perform a specific function without replacing SIPD. In contrast, this study uses the term hybrid work practices to refer to relatively stable patterns in which SIPD remains part of the main work sequence while complementary organizational resources or practices are functionally connected to the completion of particular tasks. This distinction allows the analysis to focus not simply on the presence of multiple tools, but on how their functions are connected within organizational work.

This study therefore focuses on how hybrid work practices are formed through the interaction between digital infrastructure, actors, and complementary organizational resources. Rather than assuming that the continued use of resources outside SIPD represents resistance to digitalization or system failure, the study examines how employees work with the platform under existing access and authority arrangements, how they incorporate other resources into particular work sequences, and how recurring ways of working develop through coordination and experience.

The study contributes in four related ways. Empirically, it explains the formation of hybrid work practices in SIPD implementation by examining how digital and complementary resources are connected across regional financial management activities. Theoretically, it brings Structuration Theory and Technology-in-Practice together to explain the relationship between centralized digital infrastructure, actor agency, and the enactment of technology in everyday work. Conceptually, it develops an understanding of hybrid work practices that goes beyond the simple coexistence of digital and manual tools by emphasizing their functional connection within recurring work sequences. Practically, the study also provides insight for public organizations evaluating digital transformation, particularly where centralized platforms coexist with organizational resources that continue to support calculation, verification, reconciliation, and reporting.

Based on this background and research gap, this study aims to explain how hybrid work practices are formed in the implementation of SIPD within a local government. Accordingly, the research question is: How are hybrid work practices formed in the implementation of SIPD within a local government?

## **2. Literature Review**

### **2.1 Digital Transformation and Work Practices in the Public Sector**

Digital transformation in public organizations involves more than the adoption of new technologies. It can affect organizational processes, structures, routines, and ways of working. A systematic review of 164 studies by Haug et al. (2024) shows that digitalization in the public sector is associated with changes ranging from procedures and workflows to organizational routines and managerial practices. Digital platforms can improve information exchange, standardization, and coordination, but they may also require organizations to adjust established ways of working. Digital transformation is therefore better understood as an organizational change process in which technology becomes embedded in existing organizational arrangements.

This interaction is particularly visible in everyday work. Moser-Plautz & Schmidhuber (2023) show that digital transformation in public administration does not produce uniform outcomes. The ways in which technology affects work are shaped by organizational characteristics, responsibilities, and contextual conditions. The same technology may consequently be enacted differently across organizational settings. The presence of a digital system does not, by itself, determine how work is performed; its practical effects depend partly on how actors incorporate it into existing work processes.

The relationship between technology and organizational routines is further illustrated by Almatrodi & Skoumpopoulou (2023). Their study shows that established routines can shape the course of digital transformation because existing ways of working may not fully fit new technological environments. Such differences may prompt organizations to modify their processes and routines, but they do not necessarily eliminate previous practices. Depending on organizational needs, some practices may be retained,

adjusted, or combined with new technologies. Digitalization therefore does not necessarily follow a straightforward path from manual work to fully digital work.

The role of actors becomes more apparent when digital transformation is examined at the micro level. Annosi et al. (2023) identify cognitive models, routines, and organizational structures as important micro-foundations of digital transformation. Their perspective highlights how actors and organizational routines shape the process through which new technologies are incorporated into organizational life. Digital transformation is thus not simply the outcome of introducing a technological system, it also involves how actors understand, interpret, and integrate that technology into their existing ways of working.

These processes can be particularly complex in the public sector, where formal rules, hierarchical structures, distributed authority, and interdependencies across organizational functions shape everyday action. Gritt et al. (2024) show that digital transformation in public organizations may remain incomplete, contested, and localized because implementation is influenced by everyday practices, ambiguities in rules, and interdependencies among organizational units. Isik et al. (2024) similarly demonstrate that translating digital transformation policies into operational practices can produce variations in implementation. Digital implementation can therefore be understood as a process of translation through which policy and technological design are enacted in particular organizational contexts.

Taken together, these studies suggest that digital transformation can change organizational processes and routines, but that such changes are often gradual and uneven (Haug et al., 2024; Moser-Plautz & Schmidhuber, 2023). Existing practices may be adapted, retained, or combined with new technologies rather than simply replaced (Almatrodi & Skoumpopoulou, 2023; Annosi et al., 2023). In public organizations, the resulting forms of transformation are also shaped by formal rules, organizational interdependencies, and local practices (Gritt et al., 2024; Isik et al., 2024). Understanding digital transformation therefore requires attention not only to whether a technology has been adopted, but also to how it becomes part of everyday work and how it interacts with the resources and practices already available within the organization.

For this study, this perspective provides the starting point for examining SIPD implementation. The use of a digital platform does not necessarily produce fully digital work practices. Actors may adjust work sequences, draw on existing knowledge and resources, retain particular practices, or connect the technology with other organizational resources when completing their work. The relevant analytical issue is therefore not simply whether digital technology replaces existing practices, but how technology becomes connected with organizational work and the resources through which that work is accomplished. This provides the basis for examining the formation of hybrid work practices in SIPD implementation.

## 2.2 SIPD and Digitalization of Local Government

The Regional Government Information System (Sistem Informasi Pemerintahan Daerah, or SIPD) is a central component of local government digitalization in Indonesia. SIPD is formally regulated under Minister of Home Affairs Regulation No. 70 of 2019, which provides the regulatory basis for managing local government information through an interconnected information system. The system covers information related to regional development and finance and is intended to support the integration of government processes and information across local government functions (Ministry of Home Affairs, 2019).

Research on SIPD has identified several benefits associated with its implementation, including improved information integration, greater process consistency, transparency, accountability, and support for regional financial management (Hersadjati et al., 2025; Nareswari & Prayana, 2026; Firdaus & Yuningsih, 2025). SIPD therefore functions not merely as an additional administrative application but as part of the formal processes through which local governments plan, administer, and report their activities.

The implementation of SIPD, however, does not take place under uniform organizational and technological conditions. Studies across different local government settings have reported challenges involving system integration, technical disruptions, organizational capacity, and user adaptation (Nareswari & Prayana, 2026; Teken & Romarina, 2024). Research has also documented the continued use of complementary systems and resources outside SIPD. Sulistyowati (2025), for example, found that 74% of the local governments in the study continued to use more than one unintegrated financial information system. (Fatoni, 2026) likewise identified shadow manual bookkeeping practices in regional financial information management. These findings suggest that the growing role of SIPD as the main digital platform does not necessarily mean that all work has moved into a single system.

The significance of these external resources depends on what they enable actors to accomplish. Manual records, worksheets, supporting documents, and complementary systems may be used for data preparation and calculation, validation, reconciliation, process control, or further processing of information generated by SIPD. Their use therefore needs to be considered as part of the broader work process rather than automatically treated as evidence of a failure to adopt the digital system. SIPD and other organizational resources may operate alongside one another within the same work sequence, with each serving a different function.

This distinction also helps separate complementary resources from workarounds and other forms of non-system work. A workaround generally refers to an action taken to overcome a specific obstacle in a system, while a complementary resource may remain part of a recurring work process even when the digital system is functioning normally.

Similarly, the presence of a manual record does not necessarily mean that the associated work has been separated from SIPD. What matters is how the resource is connected to the digital process and what function it performs within the sequence of work.

This distinction is important because existing SIPD research has primarily examined system effectiveness, implementation benefits, technical and organizational barriers, and the need for user adaptation. More recent studies have begun to recognize the persistence of manual practices and complementary systems, but there is still limited understanding of how these resources function in everyday work. In particular, less is known about how actors connect complementary resources with SIPD, how different resources perform distinct but related functions within a work sequence, and how recurring configurations of resources may develop into relatively stable work practices. The literature has therefore provided considerable insight into system conditions and implementation outcomes, while giving less attention to the processes through which work practices are formed around the system.

This study builds on this perspective by examining SIPD implementation as a setting in which hybrid work practices may emerge. In this study, hybrid work practices refer to relatively stable patterns in which SIPD remains part of the main work sequence while complementary organizational resources or practices are functionally connected to the completion of particular tasks. The focus is therefore not on deciding whether practices outside SIPD constitute deviations from the intended system. Instead, the study examines how SIPD, complementary resources, and actors' actions become connected in everyday work. Explaining this relationship requires an analytical perspective that considers both the conditions established by the digital infrastructure and the ways actors enact technology within those conditions.

### **2.3. Structuration Theory and Technology-in-Practice**

Giddens (1984) Structuration Theory provides a perspective for examining how organizational practices develop through the relationship between structural conditions and actors' actions. Structure consists of rules and resources that provide the conditions within which action takes place, while actions contribute to the reproduction of social practices. This relationship is captured in the concept of the duality of structure, in which structure is both a medium through which action is performed and an outcome reproduced through practice. For the present study, this perspective is useful because SIPD implementation involves formal arrangements of access, authority, procedures, and resources that shape what actors can do while leaving room for actors to organize their work in practice.

SIPD is therefore not treated as structure itself. Rather, it is understood as a digital infrastructure through which particular rules, authority arrangements, access rights, workflows, and resources are operationalized. User access and approval stages, for example, determine who can perform particular activities, while information visibility

and monitoring functions provide resources for verification and coordination. These arrangements shape the conditions within which actors perform their work. They can enable particular actions while limiting actors' ability to directly modify the underlying system arrangements.

The concept of agency helps explain how actors respond to these conditions. Agency refers here to actors' capacity to draw on their knowledge and available resources and to make practical decisions about how work is accomplished. It does not imply that actors can freely modify the underlying structure of SIPD. Their agency is bounded by system-level access, authority, and control arrangements, but this does not eliminate their capacity to adjust everyday work. Actors may rearrange the sequence of activities, conduct additional checks, combine different resources, or coordinate with other actors when particular work requirements cannot be fully addressed through the processes available in SIPD. This bounded form of agency is important for understanding why actors may change how work is performed without changing the digital infrastructure itself.

Structuration Theory thus provides the study with a way to examine the conditions of action and the scope of agency in SIPD implementation. However, explaining these conditions alone does not show how technology becomes part of actual work. For this purpose, the study draws on Orlikowski (2000) concept of Technology-in-Practice. Technology-in-Practice emphasizes that technology does not have fixed organizational consequences once it is introduced. Rather, its practical form emerges through how actors use and enact it in particular organizational contexts. The same technological system may therefore be used differently depending on work objectives, actors' knowledge, available resources, and organizational conditions. This perspective shifts analytical attention from what SIPD is designed to do to how its features are enacted through actual work practices.

In the context of this study, Technology-in-Practice helps explain how actors use SIPD together with other organizational resources. For example, actors may use the system for formal processing and authorization while using spreadsheets for calculation, supporting documents for verification, or external records for reconciliation. These resources are not analytically equivalent to SIPD, nor do they necessarily replace it. Their significance lies in how actors connect their functions to the digital process in order to accomplish particular tasks. Technology-in-Practice therefore provides a basis for examining the practical configuration of SIPD and complementary resources within everyday work.

The two perspectives serve different but complementary analytical purposes. Structuration Theory explains the structural conditions within which actors operate and why their agency is bounded by rules, authority, access, and resources. Technology-in-Practice explains how actors enact the technology within those conditions and give practical form to the relationship between SIPD and other organizational resources.

Bringing the two perspectives together makes it possible to examine both why actors have room to adapt their work and how that adaptation takes practical form.

This combined perspective does not assume in advance that hybrid work practices will emerge in every activity. Instead, structure and agency, together with the practical enactment of technology, are treated as sensitizing concepts that guide attention to how work is actually performed. Other themes emerging from the empirical material, such as coordination, learning, complementary resources, functional integration, and repeated enactment, can therefore be examined without being forced into predetermined theoretical categories.

From this perspective, hybrid work practices can be understood as work configurations that develop when actors enact SIPD within existing organizational conditions while functionally connecting the platform with complementary resources and practices. Whether such configurations remain temporary adaptations or become relatively stable practices can be examined in relation to how they are repeatedly enacted, coordinated, learned, and reproduced in organizational work. The conceptual framework that brings these relationships together is developed in the following section.

## **2.4. Synthesis and Conceptual Framework**

The literature reviewed above indicates that digital transformation in public organizations does not necessarily replace existing ways of working with digital technologies. Instead, technological arrangements become embedded in organizational settings where actors continue to draw on existing knowledge, resources, and practices. Research on SIPD similarly suggests that the increasing role of a centralized digital platform does not necessarily eliminate complementary resources and systems. The key issue is therefore not simply whether such resources remain in use, but how they become connected to SIPD within everyday work and how these connections may develop into relatively stable patterns of practice.

Drawing on Structuration Theory and Technology-in-Practice, this study conceptualizes hybrid work practices as emerging from the interaction between structural conditions and situated action. SIPD provides a centrally managed digital infrastructure through which rules, access arrangements, authority, workflows, and digital resources are operationalized. These arrangements shape the conditions of action and define the boundaries within which actors can organize their work. Within these boundaries, actors exercise bounded agency by drawing on knowledge, coordinating with other actors, and adjusting work sequences or available resources to accomplish particular tasks.

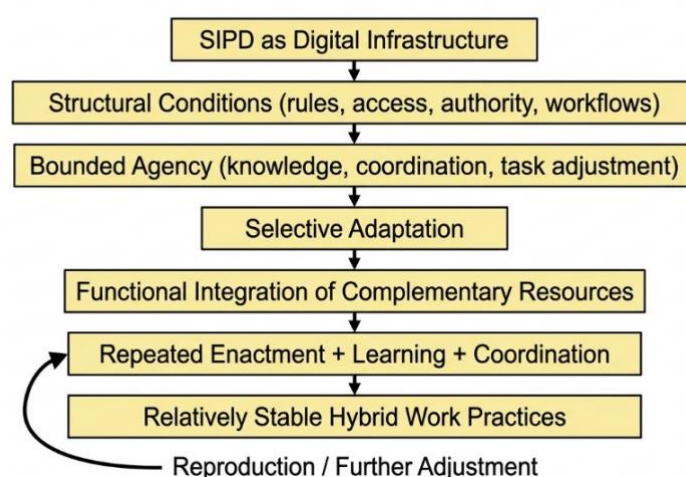
Where the functions provided by SIPD do not fully correspond to particular work requirements, actors may connect the platform with complementary organizational resources. These resources may include spreadsheets, manual workpapers, supporting documents, external records, reconciliation mechanisms, or complementary applications. Their analytical significance lies in their functional connection to SIPD rather than simply

in their presence. A resource may support calculation or preparation before information is entered into SIPD, verification and control during processing, or reconciliation and further processing after information has been generated by the system. Different resources can therefore perform distinct but connected functions within the same work sequence.

Based on this synthesis, hybrid work practices refer to relatively stable configurations in which SIPD remains part of the main work sequence while complementary organizational resources or practices are functionally connected to the completion of particular tasks. This definition distinguishes hybrid work practices from manual practices that operate independently of SIPD and from temporary workarounds used only to overcome a specific system problem. The presence of an additional resource alone is therefore insufficient to constitute a hybrid practice; the resource must be connected to SIPD through a recurring work process and perform a distinct but related function.

The framework also recognizes that hybridization is selective rather than uniform across activities. When SIPD adequately supports a particular task, actors may follow the digital process directly. When additional functions are required, actors may integrate other resources into the work sequence. The resulting configuration can vary according to task requirements, available organizational resources, actors' knowledge, and the structural conditions surrounding SIPD implementation. This allows the analysis to account for both hybrid and SIPD-only practices within the same organizational setting.

**Figure 1. Analytical Framework for the Formation of Hybrid Work Practices in SIPD Implementation**



Source: Developed by the Authors (2026)

The framework is analytical and recursive rather than causal. It proposes that centrally established conditions shape the scope of actors' agency, while actors' situated actions give practical form to how SIPD is used. Through adaptation, coordination, and

the functional integration of complementary resources, particular configurations of work may be enacted repeatedly. Repeated enactment, supported by learning and coordination, may contribute to the reproduction of relatively stable hybrid work practices. These practices are not assumed to become fixed; they may be modified or discontinued when work requirements, organizational conditions, or system arrangements change.

Accordingly, the framework brings together four analytical dimensions: structural conditions, bounded agency, functional integration, and reproduction. Structural conditions refer to the rules, access arrangements, authority, workflows, and digital resources operationalized through SIPD. Bounded agency refers to actors' capacity to organize and adjust their work while remaining subject to system-level and organizational constraints. Functional integration refers to the connection of SIPD with complementary resources that perform distinct but related functions within a work sequence. Reproduction refers to the repeated enactment, coordination, and learning through which particular configurations may become relatively stable practices.

These dimensions are used as sensitizing concepts rather than predetermined empirical categories. The analysis remains open to themes emerging from the empirical material, including coordination, learning, resource dependence, and differences across work activities. The framework therefore does not prescribe a single pathway for all activities but provides an analytical basis for examining how different configurations of work develop around SIPD.

The conceptual relationship can be summarized as follows: SIPD establishes structural conditions within which actors exercise bounded agency; bounded agency enables selective adaptation and functional integration of complementary resources; coordination and learning support repeated enactment; and repeated enactment may contribute to the reproduction of relatively stable hybrid work practices. This relationship provides the analytical link between the literature and the empirical analysis by directing attention to how digital infrastructure, actors, organizational resources, and work practices become connected in particular financial management activities.

The focus is therefore not on whether work is fully digital or manual, nor on whether the continued use of complementary resources represents system failure. Instead, the framework examines how a centralized digital infrastructure becomes embedded in organizational work through actors' situated actions and the functional integration of organizational resources, and how some of these configurations may become relatively stable over time.

### **3. Research Method**

#### **3.1 Research Design and Context**

This study employed a qualitative approach with a case study design to examine how hybrid work practices are formed in the implementation of SIPD within the local government under study. A case study design was considered appropriate because the

study examined a contemporary organizational phenomenon within its real-life context and sought to understand the relationship between organizational conditions, actors, and work practices (Yin, 2018). The case was bounded organizationally to the local government under study, substantively to the implementation of SIPD in regional financial management, and temporally to the period from 2020 to 2026.

The local government under study is a subnational public organization with multiple administrative and financial functions operating across the local-government level and its organizational agencies. Regional financial management involves interconnected activities, including planning, budgeting, financial administration, activity implementation, accounting, reporting, and accountability. These activities involve actors with different responsibilities, levels of authority, and access to SIPD, requiring coordination across organizational levels and work functions.

This organizational setting is relevant to the study because SIPD provides a centrally managed digital infrastructure while its implementation is enacted by actors working across different organizational positions and financial processes. The combination of centralized system arrangements and distributed organizational responsibilities creates conditions in which employees may need to coordinate tasks, adjust work sequences, and use organizational resources beyond the platform to complete particular activities. The setting therefore provides an appropriate context for examining how digital and complementary resources become connected within everyday work and how such configurations develop into relatively stable hybrid work practices.

SIPD implementation during the study period was not treated as a single adoption event. Rather, it was examined as a process of progressive organizational adjustment as the system was introduced and subsequently used across different stages of regional financial management. Data were collected in 2026, while developments and experiences from earlier stages of implementation were reconstructed through informants' accounts and organizational documents. Participant observation conducted during the 2026 data-collection period was used to examine current work practices and organizational interactions and was not treated as direct observation of earlier implementation stages. This distinction was maintained to separate contemporaneous observation from retrospective accounts.

The unit of analysis was the organization, while individuals were positioned as informants. The case study design therefore enabled the study to connect organizational-level arrangements with the everyday enactment of SIPD across different financial functions and organizational levels.

### **3.2 Informants and Data Sources**

Informants were selected purposively based on their direct involvement in regional financial management activities that use SIPD and their experience with the implementation and use of the system. The selection criteria were: (1) direct involvement

in regional financial management processes using SIPD; (2) knowledge of SIPD implementation within the local government under study; and (3) sufficient work experience to provide information about changes and adaptations in work practices over the period examined.

Eight key informants were selected from different functions across the regional financial management cycle, covering planning, budgeting, financial administration, activity implementation, financial management, and financial reporting. Four informants represented functions at the local-government level, while four represented financial functions at local government agencies. This cross-level composition was intended to capture how centrally established SIPD arrangements were translated into work practices across organizational positions with different responsibilities, authority, and access. The informants were therefore selected not simply because they were SIPD users, but because their positions placed them at different points in the sequence through which financial work was planned, processed, verified, and reported.

The local-government-level informants included personnel responsible for planning, budgeting, financial administration/treasury, and accounting and financial reporting. These functions provided perspectives on how SIPD was used across planning, budgeting, financial transactions, consolidation, and reporting. The agency-level informants included personnel involved in financial management, activity implementation, expenditure treasury, and financial reporting. Their perspectives provide insight into how centrally established SIPD processes were enacted at the organizational-unit level, including how actors coordinated their work and incorporated complementary resources where required. The profile of the informants is presented in Table 1.

**Table 1. Profile of Informants**

| <b>Informant</b> | <b>Function in Regional Financial Management</b> | <b>Organizational Scope</b> | <b>Work Experience</b> | <b>Relevance to the Study</b>                                            |
|------------------|--------------------------------------------------|-----------------------------|------------------------|--------------------------------------------------------------------------|
| INF-01           | Planning                                         | Local government            | 8+ years               | Planning processes and coordination related to SIPD implementation       |
| INF-02           | Budgeting                                        | Local government            | 15+ years              | Budgeting processes and integration of budget policies into SIPD         |
| INF-03           | Administration/Treasury                          | Local government            | 10+ years              | Financial administration and transactions using SIPD                     |
| INF-04           | Accounting and Financial Reporting               | Local government            | 10+ years              | Data consolidation and financial reporting using SIPD                    |
| INF-05           | Financial Management                             | Local government agency     | 7+ years               | SIPD use at the agency level and verification processes                  |
| INF-06           | Activity Implementation                          | Local government agency     | 10+ years              | SIPD use in activity implementation and related financial administration |

| Informant | Function in Regional Financial Management | Organizational Scope    | Work Experience | Relevance to the Study                                           |
|-----------|-------------------------------------------|-------------------------|-----------------|------------------------------------------------------------------|
| INF-07    | Expenditure Treasury                      | Local government agency | 10+ years       | Financial administration and accountability practices using SIPD |
| INF-08    | Financial Reporting                       | Local government agency | 6+ years        | Financial reporting processes and SIPD-related work adjustments  |

Source: Developed by the Authors (2026)

The adequacy of the informant sample was considered using the concept of information power proposed by Malterud et al. (2016). Rather than treating the number of eight informants as sufficient on numerical grounds, information power was assessed based on the focused research question, the specific relevance of the informants to the phenomenon, the diversity of functions represented, the depth of the information obtained, and the convergence of information across data sources. All informants had direct experience with financial processes involving SIPD, while their different organizational positions provided perspectives on different stages of the financial management cycle.

The interviews lasted approximately 25–50 minutes and generated detailed accounts of SIPD use, work sequences, coordination, adaptation, resource integration, and system-related constraints. Information concerning complementary resources and adaptations was compared across informants occupying different functions and organizational levels and was examined alongside participant observations and documentary materials. This comparison enabled the researchers to identify recurring patterns as well as differences between organizational positions. Data collection was concluded when subsequent interviews provided sufficient confirmation of the patterns already identified and did not generate substantively new information relevant to the research question, particularly concerning work sequences, resource combinations, coordination processes, and adaptations identified in earlier interviews.

Thus, the adequacy of eight informants was assessed not by statistical representation but by the specificity, depth, diversity, and cross-source convergence of the information obtained. The combination of local-government-level and agency-level perspectives enabled the study to examine both the organizational conditions surrounding SIPD and the ways in which those conditions were enacted and adapted in everyday financial management work.

### 3.3 Data Collection

Data were collected in 2026 through semi-structured interviews, participant observation, and documentary review. Formal written research permission was obtained before data collection, followed by contact with prospective informants to explain the research purpose and request their participation. Semi-structured interviews were conducted with all eight informants and lasted approximately 25–50 minutes. With their

consent, interviews were audio-recorded and transcribed for analysis. The interview guide focused on SIPD use in everyday work, particularly work sequences, access and authority, coordination, adaptation, complementary resources, resource integration, and changes in work practices over time.

Participant observation was conducted for approximately two months on regular working days. As an employee within the organization under study, the researcher observed work activities and interactions related to SIPD, including task sequences, coordination, use of complementary resources, checking and reconciliation, and responses to system-related issues. Observation focused on how actors performed tasks, coordinated with other organizational units, combined SIPD with other resources, and responded to system-related constraints during everyday work. Observation notes were maintained throughout the period. Experiences from earlier stages of SIPD implementation were examined through interview accounts and documentary evidence rather than treated as contemporaneous observation.

Documentary review covered regulatory and policy materials, planning and budgeting documents, financial management and reporting materials, SIPD-related records and communications, and organizational or operational records. These documents were reviewed to examine formal requirements, work procedures, system-related arrangements, and evidence of financial management practices that could be compared with interview and observation data. These documents were used to complement interview and observation data and to examine the relationship between formal procedures and actual work practices.

The three data sources were considered complementary. Interviews provided accounts of actors' experiences and interpretations, observations provided evidence of work practices and interactions as they occurred during the data-collection period, and documents provided information on formal requirements and organizational records. This combination supported comparison across data sources and helped distinguish reported practices from formally prescribed procedures and contemporaneously observed activities.

### **3.4 Data Analysis**

The data were analyzed using Reflexive Thematic Analysis (RTA) with an abductive orientation (Braun & Clarke, 2022; Timmermans & Tavory, 2012). The analysis was iterative, moving between the empirical data and relevant theoretical concepts to develop themes that explained the formation of hybrid work practices. The analysis began with repeated reading of interview transcripts, observation notes, and documentary materials to develop familiarity with the dataset. Initial codes were then generated from data segments relevant to the research question, after which related codes were compared and organized into candidate themes. Themes were subsequently reviewed across informants, organizational levels, and data sources, refined in relation to

the empirical material, and interpreted through Structuration Theory and Technology-in-Practice. This process allowed theoretically informed interpretation while keeping the analysis open to patterns that emerged from the empirical material.

Structure, agency, adaptation, and reproduction were used as sensitizing concepts rather than predetermined coding categories. The analysis remained open to empirical patterns concerning coordination, learning, complementary resources, functional integration, repeated enactment, and differences across work activities. For example, accounts of using Excel for calculation before entering information into SIPD were initially coded as complementary calculation or preparation. When similar practices recurred across relevant activities and informants, their functional relationship with SIPD was examined as a pattern of functional integration and subsequently interpreted through Technology-in-Practice. Likewise, accounts of restricted system access and centralized authority were interpreted through Structuration Theory to examine how organizational actors exercised agency within system-level constraints.

NVivo 15 was used to organize and retrieve coded materials and support the documentation of the analytical process. The software served as a data-management tool. Coding interpretation, theme development, and theoretical explanation remained the responsibility of the researchers.

### **3.5 Data Trustworthiness and Research Ethics**

Trustworthiness was supported through triangulation, an audit trail, and researcher reflexivity. Interview accounts from informants occupying different organizational positions were compared with participant observations and documentary materials to identify recurring patterns and contextual differences. Where accounts differed, the differences were considered in relation to the informant's role and the specific work context rather than treated automatically as inconsistencies. Analytical decisions, including coding, theme development, and theme refinement, were documented to maintain traceability from the empirical material to the reported findings. These practices are consistent with established guidance for transparent reporting of qualitative research, particularly regarding data collection, analysis, and researcher reflexivity (Tong et al., 2007).

Reflexivity was particularly important because the researcher was also an employee within the organization under study. The researcher therefore considered how prior organizational knowledge and familiarity with SIPD could influence data collection and interpretation. Retrospective accounts were distinguished from direct observations, and interpretations were examined against documentary evidence and accounts from informants with different organizational roles.

Participation was voluntary, and informants were informed of the research objectives and scope before the interviews. Audio recording was conducted only with their permission. Informants were anonymized using codes INF-01 to INF-08, and the

local government under study was also anonymized. Findings were presented using functional roles and organizational levels rather than personally identifying information. Interview recordings, transcripts, observation notes, and other research materials were stored securely and were accessible only for research purposes. Organizationally sensitive information was presented in anonymized form to reduce the risk of identifying individual informants or disclosing confidential organizational details.

## **4. Results and Discussion**

### **4.1 SIPD as the Main Digital Infrastructure in Work Practices**

The findings show that SIPD has become the main digital infrastructure through which regional financial work is organized and performed in the local government under study. Across the eight informants, SIPD was consistently described as the primary system used for planning, budgeting, financial administration, accountability, and reporting, although its use varied according to work function and organizational position. INF-03, for example, described SIPD as the main application used for daily financial administration and transactions. This indicates that SIPD has moved beyond being an additional digital tool and has become embedded in the main sequence of regional financial work.

The central position of SIPD is also reflected in how access and responsibilities are distributed among organizational actors. Different stages of financial work are connected to specific user accounts and authority levels. INF-05 explained that transactions entered by the treasurer require verification through the PPK account before further authorization, while INF-06 described the shift of RAK input responsibility to the PPTK, although the task could be delegated to supporting staff. These arrangements show that SIPD has contributed to a reconfiguration of work roles and interdependence among actors.

The system also changes how work is monitored and coordinated. INF-01 reported that planning data entered by organizational units can be monitored through SIPD, allowing responsible personnel to identify entries requiring attention and communicate with the relevant units. INF-02 similarly explained that the system enables monitoring without requiring physical coordination for every routine checking activity. However, coordination remains necessary for clarification, finalization, and problems that cannot be resolved at the local level.

At the same time, the findings show that SIPD operates within a substantially centralized authority structure. Local users can perform activities according to their assigned access but cannot directly modify or maintain all parts of the system. INF-03 contrasted SIPD with the previous SIPKD, where local administrators had broader authority to handle certain technical problems. Under SIPD, problems beyond local access must generally be reported through BPKAD and communicated to the central

administrator or Pusdatin. This creates a distinction between the authority to use the system and the authority to modify or maintain its underlying infrastructure.

From the perspective of Structuration Theory, SIPD can therefore be understood as a digital infrastructure that operationalizes rules, access arrangements, authority, and workflows rather than as structure itself (Giddens, 1984). These arrangements enable actors to perform financial work while simultaneously constraining their ability to alter the underlying digital infrastructure. Agency is therefore exercised within system-level boundaries, rather than being eliminated by the centralized configuration of the system.

Overall, SIPD has established the main digital infrastructure for regional financial work while simultaneously reshaping access, authority, work sequences, and coordination. The findings nevertheless show that the same centralized infrastructure does not produce a uniform pattern of action. Actors may follow the established process directly, wait for system resolution, or adjust aspects of their work depending on the requirements and timing of particular activities. The next section examines how actors connect SIPD with complementary organizational resources and how these resources perform different functions within the work sequence.

## 4.2 Complementary Resources and Functional Integration

Although SIPD has become the main digital infrastructure, the findings show that some regional financial activities are not completed entirely within the platform. Across the informants, actors reported using Excel, worksheets, supporting documents, external records, and, in some activities, complementary applications for specific functions within SIPD-related work sequences. These resources were used for calculation, preparation, checking, reconciliation, documentation, and further processing. The important finding is not simply the continued use of multiple resources, but how these resources perform different yet connected functions within the same work process.

One recurring pattern involves the preparation and calculation of information before it is entered into SIPD. INF-08 explained, *“When we do calculations, we usually do them manually using Excel. Once the figures are finalized, we enter them into SIPD.”* Similarly, INF-06 reported that staff prepared planning figures in Excel before entering the final figures into the system. Excel was also used to develop alternative scenarios when budget limits had to be considered. INF-06 explained, *“BPKAD said that we could only afford 3.9 trillion. So, we used Excel to work out the scenarios.”* These practices indicate that calculation and simulation may take place outside SIPD, while SIPD remains the platform for formalizing the resulting information. Excel therefore performs a specific preparatory and analytical function without replacing SIPD as the main platform.

Worksheets also form part of the work sequence before and during particular activities in SIPD. INF-08 stated, *“We are also required to fill out a worksheet... the format is provided by BPKAD... before proceeding to enter the journal.”* INF-06 likewise described the use of a manual workpaper during RAK preparation and input because it

provides detailed figures that can be checked against the SIPD entry. In these activities, the worksheet provides a reference and checking function that is linked to subsequent processing in SIPD rather than operating as an independent alternative system.

Complementary resources are also used for control and validation after or alongside SIPD processing. INF-07 described the use of an Excel control file to compare financial balances, while the treasurer checks the Bank Riau balance against the balance recorded in SIPD. INF-03 similarly described checking SIPD transaction records against supporting records, while INF-04 explained that monthly cash and non-cash reconciliation is conducted to identify differences. INF-04 stated, *“That is why reconciliation is conducted every month. Both cash reconciliation and non-cash reconciliation. We do it every month.”* These practices show that checking and reconciliation may involve comparison between SIPD data and other organizational or external records rather than reliance on SIPD output alone.

The same pattern appears in financial reporting. INF-04 explained that the notes to the financial statements (CALK) are still prepared separately because they are not fully available as an output within SIPD. Excel workpapers are also maintained for consolidation and checking, including comparison of SIPD results across organizational units. INF-08 reported a similar need to prepare manual calculations for depreciation and inventory adjustments before entering the resulting figures into SIPD. Thus, complementary resources remain part of reporting and accounting work even when SIPD is functioning as the primary system, because particular outputs and calculations are completed outside the platform before being incorporated into the formal digital process.

In some activities, SIPD outputs are also processed through another application. INF-02 explained, *“For evaluation, we currently use our own application. We retrieve the data from SIPD, process it again, and enter it into our application.”* This case illustrates that SIPD can serve as the formal source of financial data while another application performs a function-specific analytical or evaluative role. The cross-informant evidence can be summarized as follows.

**Table 2. Forms and Functions of Complementary Practices Around SIPD**

| Work activity                   | Complementary resource/practice | Main function                             | Position in work sequence   | Supporting informants  |
|---------------------------------|---------------------------------|-------------------------------------------|-----------------------------|------------------------|
| Planning and budget preparation | Excel/manual workpaper          | Calculation, preparation, and simulation  | Before SIPD                 | INF-01, INF-06         |
| RAK preparation and input       | Manual workpaper                | Reference, checking, and error prevention | Before/concurrent with SIPD | INF-06                 |
| Transaction control             | Excel/control file              | Verification and comparison               | Concurrent with SIPD        | INF-04, INF-06, INF-07 |

| Work activity                           | Complementary resource/practice                | Main function                                      | Position in work sequence | Supporting informants          |
|-----------------------------------------|------------------------------------------------|----------------------------------------------------|---------------------------|--------------------------------|
| Financial comparison and reconciliation | Bank/external records and Excel/manual records | Matching and discrepancy identification            | Concurrent/after SIPD     | INF-03, INF-04, INF-07, INF-08 |
| Financial reporting                     | Excel/manual workpapers                        | Consolidation, checking, and completion of outputs | Concurrent/after SIPD     | INF-04, INF-08                 |
| Transaction verification                | Supporting documents                           | Verification and documentation                     | Concurrent with SIPD      | INF-03, INF-04, INF-07, INF-08 |
| Output processing and evaluation        | Complementary application/system               | Further analysis and processing                    | After SIPD                | INF-01, INF-02                 |

Source: Developed by the Authors (2026)

The table demonstrates that complementary resources are distributed across different stages and functions of regional financial work. For example, figures may be calculated in Excel before entry into SIPD, checked against supporting records during processing, compared with external balances during reconciliation, or processed further for reporting and evaluation. The relationship among these resources is therefore functional rather than merely simultaneous: different resources perform different tasks while remaining connected to SIPD within the same broader work sequence.

This pattern is consistent with Orlikowski (2000) concept of Technology-in-Practice, which emphasizes that the practical use of technology emerges through its enactment in organizational contexts. In this case, SIPD provides the formal digital platform, while actors configure their work around it by connecting the platform with resources that support calculation, checking, reconciliation, documentation, and analysis. The resulting configuration is consequently shaped not only by the formal features of SIPD but also by the organizational functions that actors need to accomplish through the system.

The findings also complement previous SIPD research that has identified technical barriers, integration issues, and the need for supporting mechanisms (Septiani & Isnawaty, 2024; Teken & Romarina, 2024). The present findings show that complementary resources are not used only when SIPD fails or becomes inaccessible. They are also used during normal system operation when particular activities require calculation, simulation, verification, reconciliation, or reporting beyond what is performed directly within the platform.

Accordingly, the presence of Excel, worksheets, supporting documents, or other resources should not automatically be interpreted as a workaround or evidence of failed

digitalization. A workaround addresses a specific obstacle, whereas the complementary resources identified in this study may form part of established work sequences even when SIPD is operating normally. Hybrid work practices are therefore identified not by the presence of additional resources alone, but by the functional connection between SIPD and complementary resources within recurring work activities. The following section examines how actors' bounded agency enables such functional integration through selective adaptation and coordination.

#### 4.3 Coordination, Adaptation, and Bounded Agency

The findings show that coordination and learning enable actors to work within the interdependencies created by SIPD, while adaptation allows them to respond to differences between system arrangements and particular work requirements. These activities provide practical ways for actors to organize their work without altering the centralized digital infrastructure itself.

Coordination takes place across different stages and organizational levels. INF-02 explained that planning involves internal meetings and coordination between Bappeda and local government agencies. INF-01 similarly noted that although SIPD has reduced some physical interaction, meetings are still required for planning coordination and finalization. SIPD therefore does not eliminate organizational coordination. Rather, it changes some of its functions: routine information monitoring can be performed through the system, while discussion, clarification, decision-making, and final agreement continue to require interaction among actors.

Coordination also becomes important when problems cannot be resolved at the operational level. INF-07 explained, *"I have reported the problem to BPKAD because they are usually the ones who coordinate directly with the central level."* Informants also described the use of communication groups for sharing information about SIPD-related problems. BPKAD consequently becomes an intermediary through which operational users communicate issues that fall outside their available access or authority. Coordination in this context is therefore not limited to completing financial tasks but also involves navigating the distribution of authority within the SIPD infrastructure.

Learning provides another resource through which actors respond to these conditions. INF-03 described several training sessions involving the Ministry of Home Affairs, while INF-02 explained that practical knowledge was also transferred among users: *"Because they would teach their neighbors or colleagues... people from this subdistrict would gather together to learn how to enter the data."*

These accounts indicate that knowledge of SIPD is developed through both formal training and everyday interaction. Users learn not only how to operate particular functions but also how work sequences, responsibilities, and procedures are enacted in practice. Knowledge transfer therefore helps actors maintain continuity when procedures change or when experienced users are replaced by other personnel.

From the perspective of Structuration Theory, this pattern reflects the knowledgeability of actors (Giddens, 1984). Actors draw on accumulated knowledge and experience to interpret situations and organize their actions. In the present case, knowledge of SIPD procedures, work sequences, and problem-resolution channels provides a practical resource for navigating the system. At the same time, the availability of such knowledge does not give actors unrestricted control over the digital infrastructure. Their actions remain conditioned by the access, authority, and workflow arrangements embedded in SIPD.

Adaptation therefore takes different forms depending on the requirements of the activity. In some situations, actors simply adjust to the established SIPD process. INF-03 stated: “No. We simply adapted to the new system and followed the process in SIPD.” This provides an important contrasting case. The presence of system constraints does not automatically produce a complementary practice. When SIPD provides a workable process for a particular task, actors may follow the system directly. INF-02 similarly indicated that some problems in planning and budgeting could be left for central resolution because the relevant work stages still provided sufficient time. Waiting for system resolution was therefore possible in activities where timing allowed it.

In other situations, particularly when activities are time-sensitive or involve additional functional requirements, actors adjust their work more actively. The findings show adjustments in the timing of work, coordination with other actors, task distribution, and the use of complementary resources. INF-07 described working late when system problems occurred close to a deadline: *“The problem with this application is that the deadline is tomorrow. Meanwhile, the application is having problems. That is what makes us work late into the night.”* INF-06 similarly reported adjusting working time to periods when system access was more manageable. These responses show that actors may modify the timing and organization of work while continuing to use SIPD as the formal platform.

The limits of such adaptation are particularly visible when technical or database problems fall outside local authority. Informants described situations in which errors had to be reported through BPKAD to the central administrator or Pusdatin, with users waiting for the issue to be resolved. INF-05 summarized this limitation as: *“No, we cannot. We just have to wait.”* INF-03 similarly described delays when system problems could not be corrected locally. The ability to reorganize work around a system problem is therefore different from the ability to modify the system that produces the problem.

This distinction provides the basis for understanding bounded agency. Actors exercise agency by mobilizing knowledge, coordinating with other organizational actors, adjusting task timing and sequences, redistributing particular work activities, and connecting SIPD with available organizational resources. At the same time, system architecture, central database control, and higher-level access and maintenance arrangements remain outside their independent authority. Bounded agency thus describes

a condition in which actors can shape how work is enacted while remaining unable to substantially alter the digital infrastructure within which that work takes place.

This finding extends the Technology-in-Practice perspective of Orlikowski, (2000). SIPD does not determine a single uniform way of working. Its practical enactment depends on how actors respond to system arrangements and connect them with organizational conditions and resources. Structuration Theory helps explain the scope of this agency, particularly how access, authority, and rules constrain and enable action, while Technology-in-Practice helps explain how those conditions are enacted through everyday work. The two perspectives therefore explain different but connected aspects of the same process. The former identifies the conditions within which actors can act, while the latter helps explain how actors give practical form to those conditions in their work.

The findings also show that adaptation is selective and activity-dependent. Not every system problem generates an alternative resource, and not every task requires adjustment beyond the established SIPD process. Where actors can follow the system directly, they may do so; where system conditions, timing, or functional requirements create a need for adjustment, actors mobilize available organizational resources and coordination mechanisms. Hybridization therefore emerges through selective action within bounded conditions rather than through a uniform response to SIPD constraints.

Coordination, learning, and bounded agency consequently help explain how actors organize and sustain work around a centralized digital infrastructure. The next section examines how some of these adaptations, through repeated enactment, familiarity, and knowledge transfer, develop into relatively stable hybrid work practices.

#### **4.4 From Adaptation to the Routinization of Hybrid Work Practices**

The findings indicate that some adaptations to SIPD develop beyond temporary responses and become relatively stable ways of performing particular work activities. This process is visible when a particular combination of SIPD, complementary resources, coordination, and control is repeatedly used, becomes familiar to the actors involved, and acquires a recognizable place within a work sequence. Routinization in this study therefore refers to the development of relatively stable patterns of action through repeated enactment, accumulated experience, and knowledge transfer, rather than to a formally prescribed organizational routine.

Evidence of this process is particularly visible in regularly performed activities. INF-04 explained that cash and non-cash reconciliation is conducted every month, making reconciliation a recurring part of financial control rather than a response to an occasional discrepancy. INF-07 similarly described the repeated use of an Excel control file to compare financial balances with SIPD and bank records. INF-06 and INF-08 also reported recurring use of manual workpapers before or alongside particular SIPD processes. These practices have identifiable functions and recurring positions within

specific work sequences, indicating a degree of stability beyond temporary responses to system problems.

The repeated use of these resources is accompanied by increasing familiarity and knowledge transfer. INF-03 noted that users gradually became accustomed to SIPD after the transition period, while training continued as new features were introduced. INF-02 described how knowledge acquired through formal training was transferred among colleagues and to new operators when personnel changed. Thus, the continuation of these practices is supported not only by repetition but also by practical knowledge about how SIPD, complementary resources, and coordination channels are used in particular activities.

The hybrid configurations, however, are not uniform across the organization. In planning and budgeting, Excel or manual workpapers may be used for calculation, preparation, or simulation before information is entered into SIPD. In financial control, Excel and external records may support comparison and reconciliation, while in reporting, workpapers and supporting documents may support consolidation, checking, or completion of outputs. What becomes relatively stable is therefore the functional relationship between SIPD and particular complementary resources within specific activities, rather than one uniform hybrid procedure across the organization.

The findings also distinguish between transitional and persistent hybrid configurations. INF-03 and INF-04 described a period in which SIPD operated alongside the previous SIPKD system. This combination reflected an adjustment during the transition to the new platform. By contrast, workpapers, reconciliation, supporting documents, and control files continued to be used after SIPD had become the primary system. These persistent configurations remained relevant because the complementary resources continued to perform specific functions in everyday work, even when SIPD was operating normally.

The negative cases further show that hybridization is selective. INF-03 reported that when the available SIPD process could be followed, staff simply adjusted to the system and followed its procedures. INF-02 similarly indicated that some problems in planning and budgeting could be left for central resolution when the relevant work stage still provided sufficient time. Hybrid practices therefore do not emerge automatically from system limitations; they develop where particular work activities continue to involve functions that are performed through complementary resources.

From a Structuration Theory perspective, these patterns can be understood as the reproduction of social practices (Giddens, 1984). Actors draw on practical knowledge and available resources to perform work within the rules, access arrangements, authority structures, and process flows operationalized through SIPD. Repeated enactment reproduces particular relationships among actors, technology, and organizational resources, making some configurations familiar and relatively stable. Reproduction does

not, however, imply simple compliance with the digital system, because actors continue to adjust their practices when work requirements or system conditions change.

From the Technology-in-Practice perspective, the findings similarly show that SIPD acquires its practical form through repeated enactment rather than through its formal design alone (Orlikowski, 2000). The platform remains the main infrastructure for formal processing, while complementary resources continue to perform specific functions within particular activities. Repeated enactment can therefore stabilize a practical configuration in which digital processing and organizational resources are interdependent, without making that configuration fixed or universally applicable.

This finding extends previous research on digital transformation by showing more specifically how organizational practices may stabilize around a digital platform. Almatrodi & Skoumpopoulou (2023) demonstrate that digital transformation can involve changes in organizational routines, while Haug et al. (2024) emphasize that digital change in public organizations develops through changes in organizational processes and practices. The present findings show more specifically that, in the context of SIPD, the establishment of a centralized digital platform can coexist with the continued organization of complementary resources around particular work functions. The resulting hybrid configuration is therefore not necessarily an intermediate stage preceding the complete replacement of non-digital practices.

The findings also extend existing SIPD research that has documented technical barriers, integration problems, and continued use of supporting systems (Septiani & Isnawaty, 2024; Teken & Romarina, 2024). Rather than treating such persistence simply as evidence of implementation problems, the findings show how complementary resources can become functionally embedded in recurring work sequences because they continue to support control, verification, reconciliation, documentation, or information processing.

Taken together, the evidence indicates that adaptation can develop into relatively stable hybrid work practices when complementary resources are functionally integrated into recurring activities and supported by repeated enactment, familiarity, coordination, and knowledge transfer. The resulting pattern is activity-specific rather than organization-wide: SIPD remains the main digital infrastructure, while complementary resources continue to perform distinct but connected functions. These practices can be reproduced while remaining open to further adaptation when work requirements or system conditions change.

## 5. Conclusion

This study concludes that hybrid work practices in SIPD implementation are formed through the interaction of centralized digital infrastructure, bounded actor agency, complementary organizational resources, and repeated enactment. SIPD functions as the main digital infrastructure that structures access, authority, work sequences, and

monitoring, but it does not become the sole environment in which work is accomplished. Actors selectively connect SIPD with Excel spreadsheets, worksheets, supporting documents, external data, reconciliation mechanisms, and complementary applications to perform functions such as calculation, preparation, verification, control, reporting, and further processing. Through coordination, learning, and repeated enactment, some of these configurations develop into relatively stable patterns within particular work activities. Empirically, the study shows how these resources become functionally connected to SIPD across different stages of regional financial work. Theoretically and conceptually, the study brings Structuration Theory and Technology-in-Practice together to explain how actors exercise bounded agency within centralized structural conditions and how their repeated enactment can contribute to the reproduction of hybrid work practices. Practically, the findings suggest that SIPD implementation should consider recurring complementary resources and organizational practices as part of the implementation environment. System development can use recurring work requirements to identify functions that remain dependent on complementary resources, while training and support mechanisms can address end-to-end work sequences rather than system functions alone. Assessments of SIPD implementation should therefore consider not only the elimination of manual practices, but also how effectively the digital platform is integrated with the organizational resources required to accomplish work. This study is limited by its focus on one local government and its retrospective reconstruction of SIPD implementation during 2020–2026, with direct observation limited to the 2026 data-collection period. It also does not compare hybrid work practices across different local governments or organizational contexts.

Future research should address these limitations by examining multiple local governments with different organizational characteristics, institutional capacities, and levels of digital readiness. Comparative and longitudinal studies, including direct observation of specific work sequences, could further examine the conditions under which hybrid configurations emerge, become relatively stable, or change as digital systems, regulations, and organizational requirements evolve. Such research could also test and refine the analytical explanation developed in this study across different local-government contexts.

## 6. References

- Almatrodi, I., & Skoumpopoulou, D. (2023). Organizational Routines and Digital Transformation: An Analysis of How Organizational Routines Impact Digital Transformation Transition in a Saudi University. *Systems*, 11(5). <https://doi.org/10.3390/systems11050239>
- Annosi, M. C., Capo, F., Appio, F. P., & Bedetti, I. (2023). Unveiling micro-foundations of digital transformation: Cognitive models, routines, and organizational structures

- in agri-food SMEs. *Technological Forecasting and Social Change*, 197, 122922. <https://doi.org/10.1016/j.techfore.2023.122922>
- Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. SAGE Publications.
- Fatoni, A. A. (2026). Optimizing Regional Financial Information Systems in Indonesia: A CIPP Evaluation Approach to Institutional Capacity Asymmetry. *Jurnal Bina Praja*, 18(1), 35–45. <https://doi.org/10.21787/jbp.18.2026.3280>
- Firdaus, N. A., & Yuningsih, N. Y. (2025). Penerapan e-government melalui Sistem Informasi Pemerintahan Daerah (SIPD) dalam penyelenggaraan pemerintahan daerah di Kabupaten Lebak tahun 2024. *Transparansi: Jurnal Ilmiah Ilmu Administrasi*, 8(2), 300–308. <https://doi.org/10.31334/transparansi.v8i2.5427>
- Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. University of California Press.
- Gritt, E., Forsgren, E., & Pandza, K. (2024). Liminal digital transformation in public sector: The case of UK policing. *The Journal of Strategic Information Systems*, 33(3), 101851. <https://doi.org/10.1016/j.jsis.2024.101851>
- Haug, N., Dan, S., & Mergel, I. (2024). Digitally-induced change in the public sector: a systematic review and research agenda. *Public Management Review*, 26(7), 1963–1987. <https://doi.org/10.1080/14719037.2023.2234917>
- Hersadjati, M. A., Irawan, & Benius. (2025). Implementation of SIPD in Regional Financial Management: Evidence from Murung Raya Regency. *Jurnal Ilmiah Akuntansi Kesatuan*, 13(6), 1675–1688. <https://doi.org/10.37641/jiakes.v13i6.4462>
- Isik, L., Nilsson, C., Magnusson, J., & Koutsikouri, D. (2024). Benefits realization in digital transformation: the translation from policy to practice in health care. *Transforming Government: People, Process and Policy*, 18(2), 303–317. <https://doi.org/10.1108/TG-11-2023-0177>
- Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample Size in Qualitative Interview Studies: Guided by Information Power. *Qualitative Health Research*, 26(13), 1753–1760. <https://doi.org/10.1177/1049732315617444>
- Ministry of Home Affairs of the Republic of Indonesia. (2019). *Regulation of the Minister of Home Affairs Number 70 of 2019 concerning Regional Government Information Systems*.
- Moser-Plautz, B., & Schmidhuber, L. (2023). Digital government transformation as an organizational response to the COVID-19 pandemic. *Government Information Quarterly*, 40(3), 101815. <https://doi.org/10.1016/j.giq.2023.101815>
- Nareswari, D. G. F. I., & Prayana, I. K. R. (2026). Evaluation of the Effectiveness of the Regional Government Information System (SIPD) in Indonesia. *International Journal of Public Administration and Policy*, 2(2), 85–91. <https://doi.org/10.58290/ijpap.v2i2.230>

- Orlikowski, W. J. (2000). Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations. *Organization Science*, 11(4), 404–428. <https://doi.org/10.1287/orsc.11.4.404.14600>
- Septiani, I., & Isnawaty, N. W. (2024). Efektivitas Sistem Informasi Pemerintah Daerah (SIPD) dalam pengelolaan keuangan daerah di Sekretariat DPRD Provinsi Jawa Barat. *Responsive: Jurnal Pemikiran dan Penelitian Administrasi, Sosial, Humaniora dan Kebijakan Publik*, 7(4), 193–208.
- Sulistyowati, A. (2025). Integrasi Fiskal Digital Daerah: Strategi Meningkatkan PAD dan Akuntabilitas Keuangan Publik. *Matra Pembaruan*, 9(2), 135–147. <https://doi.org/10.21787/mp.9.2.2025.135-147>
- Teken, I. K. A., & Romarina, A. (2024). Efektivitas penerapan Sistem Informasi Pemerintahan Daerah terhadap kinerja pengelolaan keuangan daerah Kota Denpasar. *Jurnal Terapan Pemerintahan Minangkabau*, 4(2), 111–123. <https://doi.org/10.33701/jtpm.v4i2.4419>
- Timmermans, S., & Tavory, I. (2012). Theory construction in qualitative research: From grounded theory to abductive analysis. *Sociological Theory*, 30(3), 167–186. <https://doi.org/10.1177/0735275112457914>
- Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*, 19(6), 349–357. <https://doi.org/10.1093/intqhc/mzm042>
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE Publications.