

Overcoming Bureaucratic Cognitive Flexibility Limitations to Enhance Policy Integration: Qualitative Insights from Local Asset Management in South Konawe Regency, Indonesia

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ABSTRACT

Policy integration depends not only on formal coordination arrangements but also on how bureaucrats interpret, negotiate, and respond to complex and changing policy demands. This study examines how limitations in bureaucratic cognitive flexibility (BCF) become consequential for policy integration in local public asset management and how bureaucrats navigate these constraints in practice. BCF is conceptualized as a situated capacity to reinterpret information, revise understandings, and adjust administrative action within institutional constraints. Using an instrumental case study of South Konawe Regency, Indonesia, the study draws on 23 semi-structured interviews, documentary evidence, and approximately 120 hours of non-participant observation across three local government organizations. Thematic analysis identifies three interrelated mechanisms linking BCF to policy integration: interpretive, relational, and adaptive. Interpretively, regulatory change generated uneven understandings when new requirements were not consistently translated into shared administrative guidance. Relationally, differences in procedural understanding and technology use constrained cross-unit coordination, leaving integration partly dependent on informal communication and personal initiative. Adaptively, officials modified workflows and used digital systems to maintain administrative continuity, but these responses often remained reactive and localized rather than becoming institutionalized organizational learning. Bureaucrats partly compensated for these limitations through peer consultation, technical workshops, informal coordination, procedural adjustment, and technology use, although such practices did not consistently generate integrated routines. The findings suggest that BCF can be understood as a situated micro-foundation of policy integration rather than as an autonomous individual attribute. Its organizational consequences emerge through the interaction of bureaucratic interpretation, cross-boundary relationships, adaptive practices, and institutional conditions. The findings suggest that strengthening policy integration may require not only formal coordination structures but also arrangements that enable shared interpretation, cross-unit learning, and the institutionalization of adaptive responses.

Keywords: bureaucratic cognitive flexibility; policy integration; bureaucratic action; public asset management; local government.

INTRODUCTION

Local governments increasingly face the challenge of aligning policies, resources, and organizational processes across administrative boundaries. Policy integration has therefore become a central concern in public administration, particularly where complex policy problems require coordination across sectors, organizational units, and levels of governance (Candel & Biesbroek, 2016; Cejudo & Trein, 2023; Lidén & Nyhlén, 2024; Osborne et al., 2022). Yet fragmentation remains persistent. Disconnected planning, implementation, and evaluation can undermine coordination, administrative efficiency, and public value creation even where formal mechanisms for integration are already in place (Alam et al., 2026; Rufini et al., 2026; Trein & Ansell, 2021).

Existing scholarship explains policy integration primarily through institutional and structural conditions, including regulatory frameworks, inter-organizational coordination, administrative capacity, and governance arrangements (Bianchi et al., 2021; Cejudo & Trein, 2023; Lidén & Nyhlén, 2024). These perspectives provide important explanations for why integration succeeds or fails, but they say less about how formal arrangements are interpreted and enacted by the bureaucrats responsible for implementation. Policies do not translate automatically from institutional design into coordinated action. Bureaucrats must interpret changing rules, recognize interdependencies, reconcile competing demands, and adjust established routines. Policy fragmentation may therefore arise not only from institutional design but also from the cognitive processes through which actors make sense of policy complexity and translate it into administrative practice.

This study addresses this micro-level dimension through the concept of bureaucratic cognitive flexibility (BCF). Drawing on Cognitive Flexibility Theory (Spiro et al., 1988, 1991) and subsequent research on cognitive flexibility in work contexts (Martins & Gonçalves, 2022), BCF refers here to the situated capacity of bureaucrats to reinterpret information, revise understandings, and adjust action when confronting complex or changing policy demands. Importantly, BCF is not conceptualized as a fixed psychological trait or an inherent characteristic of individual officials. It is a context-dependent capacity that is developed, enabled, or constrained through interaction with organizational structures, regulatory environments, learning opportunities, and coordination practices. This perspective is consistent with research showing that bureaucrats are not simply rule followers but active interpreters who exercise judgment and develop coping practices within institutional constraints (Lipsky, 1980, 2010). It therefore allows cognitive flexibility and bureaucratic constraint to be examined as interacting rather than opposing conditions.

The empirical setting is local public asset management in South Konawe Regency, Indonesia. Asset management provides a particularly relevant setting for examining policy integration because planning, budgeting, procurement, utilization, reporting, and maintenance require coordination among multiple organizational units operating under common but evolving regulatory frameworks. In South Konawe, expanding fiscal resources and public asset accumulation have increased these coordination demands, while gaps persist between formal administrative arrangements and integrated asset-management practices. The case therefore provides an analytically useful setting for examining how bureaucrats interpret regulatory change, construct shared understandings across organizational boundaries, and adapt administrative routines under institutional constraints.

Against this background, the study asks two questions: (1) How do limitations in bureaucratic cognitive flexibility influence the integration of asset management policies? (2) What mechanisms and practices do bureaucrats employ to navigate these cognitive constraints, and with what consequences for policy coherence? Drawing on interviews, documents, and observations across three local government organizations, the analysis identifies three interrelated mechanisms through which BCF becomes consequential for policy integration: interpretive mechanisms, involving the reinterpretation and alignment of rules; relational mechanisms, involving shared understanding and coordination across organizational boundaries; and adaptive mechanisms, involving adjustments to routines, knowledge, and technology in response to changing demands.

The study makes a focused contribution to public administration and policy integration scholarship. Rather than treating cognition as an alternative explanation to institutional structure, it shows how the two interact. Its central argument is that policy integration depends not only on formal coordination arrangements but also on bureaucrats' situated capacity to interpret complexity, construct shared understandings across organizational boundaries, and adapt administrative routines within institutional constraints. By specifying interpretive, relational, and adaptive mechanisms, the study provides a micro-level explanation of how cognitive processes become connected to meso-level policy integration outcomes. It thereby shifts attention from whether bureaucracies are inherently rigid or flexible toward the conditions and processes through which constrained bureaucratic adaptability either supports or undermines policy integration.

LITERATURE REVIEW

This section develops the theoretical basis for explaining how bureaucratic cognitive flexibility (BCF) becomes consequential for policy integration. It brings together three bodies of literature—policy integration, cognitive

flexibility and bureaucratic action, and public asset management—to specify the mechanisms connecting situated cognitive processes with organizational integration outcomes.

Policy Integration in Public Sector Governance

Policy integration addresses the challenge of coordinating policy goals, instruments, and implementation processes across organizational and sectoral boundaries (Cejudo & Trein, 2023; Lafferty & Hovden, 2003; Rayner & Howlett, 2009). It is particularly important for complex public problems that cannot be addressed effectively within a single administrative unit or policy domain. From this perspective, integration requires more than consistency among policy objectives; it also requires coordination in implementation and the capacity to sustain coherence across organizational boundaries and over time.

Existing research has primarily explained policy integration through institutional and organizational conditions. Regulatory consistency, administrative capacity, inter-agency coordination, authority, information sharing, and institutional arrangements can facilitate integration, while conflicting mandates, organizational silos, and entrenched routines can reinforce fragmentation (Bianchi et al., 2021; Cejudo & Trein, 2023; Lidén & Nyhlén, 2024). This literature establishes that formal arrangements matter, but also demonstrates that their existence does not necessarily generate integrated implementation. Policies that appear coherent in design may still become fragmented as they move through different organizations and stages of implementation.

This limitation directs attention toward the actors who interpret and enact integration in practice. Coordination requires bureaucrats to understand policy interdependencies, reconcile different procedural demands, exchange information, and adjust actions in relation to other organizational units. Policy integration is therefore not exclusively a structural achievement. It also depends on how actors interpret institutional arrangements and translate them into coordinated administrative practices. Yet the cognitive processes underlying these activities remain comparatively underdeveloped in policy integration research.

Cognitive Flexibility and Bureaucratic Action

Cognitive flexibility refers to the capacity to shift perspectives, reconsider existing understandings, and adjust responses when confronted with new information or changing conditions (Spiro et al., 1987, 1988, 1991). Contemporary research increasingly treats cognitive flexibility not simply as a stable individual characteristic but as a capacity influenced by learning, experience, and environmental conditions (Hohl & Dolcos, 2024; Lee et al., 2024). In organizational settings, such flexibility is particularly relevant where actors must make decisions under complexity and uncertainty (Laureiro-Martínez & Brusoni, 2018).

Although Cognitive Flexibility Theory was originally developed to explain learning and knowledge representation in complex and ill-structured domains, its underlying theoretical problem is relevant to bureaucratic work: actors cannot rely on a single established representation when changing conditions require knowledge to be reconsidered and applied across situations. This study draws on that core insight rather than transferring the theory's original educational framework wholesale to public administration. Bureaucratic implementation similarly confronts officials with evolving rules, interdependent responsibilities, and situations in which established interpretations may no longer provide an adequate basis for action. Cognitive Flexibility Theory is therefore used here as a conceptual foundation for examining the capacity to reconsider established understandings under complexity, while the institutional features of bureaucracy specify the conditions under which that capacity can be exercised.

Applying this concept to public bureaucracy, however, requires attention to institutional context. Bureaucrats operate within legal mandates, hierarchical authority, accountability requirements, and standardized procedures that simultaneously structure and constrain discretion (Peters, 2018). Consequently, flexibility cannot be understood as unrestricted adaptation. Street-level bureaucracy research similarly demonstrates that public officials actively interpret rules and develop practical responses to complex demands, but do so within institutional and resource constraints (Lipsky, 2010).

Building on these insights, this study conceptualizes bureaucratic cognitive flexibility (BCF) as a situated capacity to reconsider established understandings when bureaucrats encounter changing, ambiguous, or

interdependent policy demands. BCF is neither a fixed psychological trait nor equivalent to the observable practices through which officials respond to such demands. Rather, it denotes the capacity for cognitive reconsideration that may be enabled or constrained by organizational structures, learning opportunities, regulatory environments, and patterns of interaction. Its organizational consequences become observable when this capacity is enacted through interpretive, relational, and adaptive mechanisms. This distinction separates BCF as an analytical construct from the practices through which it is expressed and from the mechanisms through which it becomes consequential for policy integration.

BCF overlaps with, but is analytically distinct from, several established concepts in public administration. Administrative and adaptive capacity concern the broader organizational resources and capabilities that enable governments to perform and respond to change, whereas BCF focuses more specifically on the situated cognitive capacity to reconsider established understandings when policy demands change, conflict, or become interdependent. Sensemaking concerns the broader process through which actors construct and reconstruct meaning under ambiguity, whereas BCF isolates the capacity to shift or reconsider an established interpretation within that process. Discretion concerns the latitude available to choose among permissible actions, whereas BCF concerns whether established understandings can be reconsidered within that latitude. Organizational learning concerns how revised knowledge becomes shared, retained, and embedded in organizational routines; BCF concerns the situated capacity for reconsideration that may contribute to, but does not itself constitute, such learning.

Similarly, boundary spanning, policy entrepreneurship, and collaborative competence describe relational roles, strategic agency, or capabilities for working across organizational boundaries; BCF addresses the cognitive reconsideration that may support such activities without presuming that officials occupy boundary-spanning or entrepreneurial roles. Its explanatory value therefore lies not in replacing these constructs but in isolating a narrower cognitive capacity: whether bureaucrats can reconsider established interpretations when formal coordination arrangements confront changing or interdependent policy demands.

From Bureaucratic Cognitive Flexibility to Policy Integration

Connecting BCF with policy integration requires specifying how micro-level cognitive processes become consequential for organizational outcomes. Analytically, BCF is treated here as a latent situated capacity rather than as a directly observed behavior. The analysis therefore does not infer BCF from any single act of consultation, coordination, or procedural adjustment. Instead, such practices provide empirical evidence of the organizational settings in which cognitive reconsideration is enabled, constrained, or translated into action. The interpretive, relational, and adaptive mechanisms specify how this situated capacity becomes consequential beyond the individual level: through the interpretation of policy requirements, the negotiation of understandings across organizational boundaries, and the incorporation of revised understandings into administrative routines.

This study proposes three interrelated mechanisms through which BCF becomes consequential for policy integration. The first is an interpretive mechanism. When policy requirements change or remain ambiguous, bureaucrats must translate them into operational meanings. BCF concerns their situated capacity to reconsider established understandings; the interpretive mechanism concerns how such reconsideration enters the process of translating rules into administrative decisions. Where opportunities for reconsideration are constrained, different units may retain divergent operational interpretations of formally common requirements.

The second is a relational mechanism. Individual interpretations become organizationally consequential through interaction. Policy integration may depend partly on bureaucrats' ability to communicate across boundaries, develop shared understandings, and adjust actions in relation to other units. The relational mechanism captures how cognitive reconsideration extends beyond the individual: actors must not only reconsider established interpretations but also negotiate revised meanings with others. Where shared interpretive frameworks are weak, structural coordination mechanisms may exist without generating coordinated practice.

The third is an adaptive mechanism. Integrated implementation must be sustained as regulations, technologies, and operational demands change. Bureaucrats therefore need to modify routines, incorporate new information, and learn from implementation experience. Adaptive responses may preserve administrative continuity, but

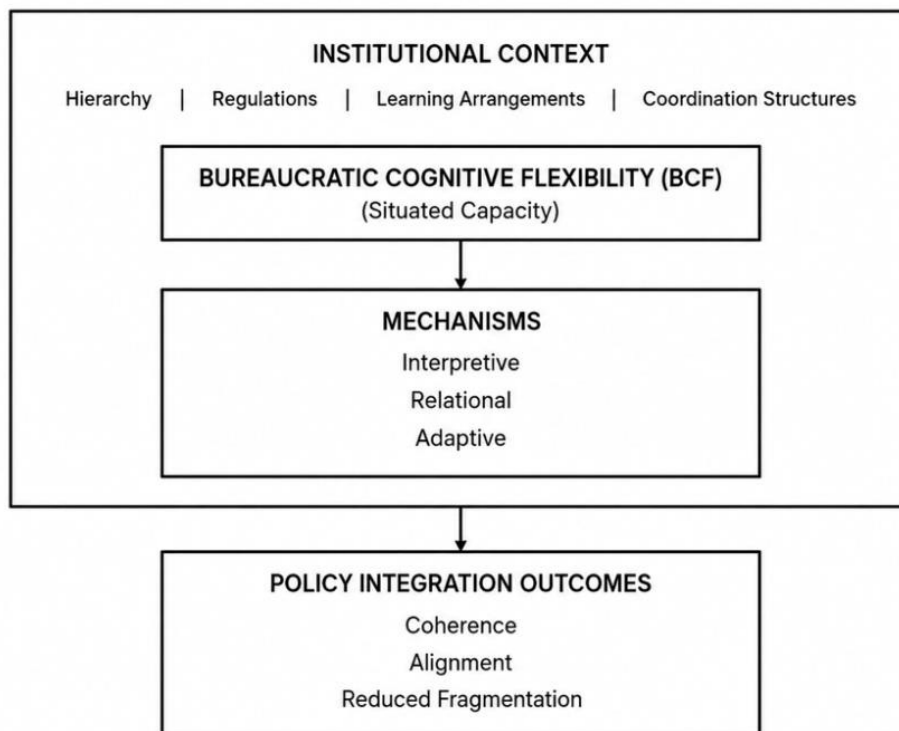
when they remain reactive, localized, or weakly institutionalized, they may fail to generate system-wide integration.

These mechanisms are analytically distinct but empirically overlapping and potentially recursive rather than fixed sequential stages. Reconsidering a policy requirement may prompt interaction across organizational boundaries, while such interaction may in turn reshape individual interpretations. Similarly, adjustments to routines or technologies may generate new interpretive and coordination demands, feeding back into interpretive and relational processes. The mechanisms may therefore reinforce or constrain one another, although their relative salience can vary across administrative situations.

The micro-level unit in this framework is the situated cognitive reconsideration undertaken by individual bureaucrats when established interpretations become inadequate for changing or interdependent policy demands. The connection to meso-level policy integration does not occur through simple aggregation of individual flexibility. It occurs when revised interpretations enter organizational interaction, are negotiated across units, and become incorporated—or fail to become incorporated—into shared administrative routines. Interpretive mechanisms therefore connect cognitive reconsideration to operational meanings, relational mechanisms connect individual interpretations to cross-unit alignment, and adaptive mechanisms connect negotiated understandings to changes in organizational routines. Policy integration emerges at the meso level to the extent that these processes produce sufficiently shared and coordinated administrative practices across organizational boundaries.

This framework addresses an important gap between two largely parallel literatures. Policy integration research has generated sophisticated explanations of institutional coordination but has paid less attention to the cognitive processes through which coordination is enacted. Conversely, cognitive flexibility research explains adaptation to complexity but rarely examines how such processes contribute to policy coherence across bureaucratic units. Bringing these perspectives together allows this study to explain not simply whether institutional arrangements facilitate integration, but how bureaucrats cognitively and relationally translate those arrangements into more or less integrated administrative action. Figure 1 summarizes this analytical framework.

Figure 1. Bureaucratic cognitive flexibility as a situated micro-foundation of policy integration



Source: Developed by the authors.

As illustrated in Figure 1, institutional conditions shape how BCF is enacted through interpretive, relational, and

adaptive mechanisms, enabling or constraining how bureaucrats translate policy complexity into coordinated action. BCF is therefore understood as a situated micro-foundation of policy integration rather than an individual capacity operating independently of its institutional context.

Public Asset Management as a Site of Policy Integration

Public asset management provides an appropriate empirical setting for examining these mechanisms because it requires sustained coordination among planning, budgeting, procurement, utilization, maintenance, accounting, and reporting functions. Government assets support service delivery and long-term development objectives, but their effective management depends on aligning decisions across organizational units and administrative stages (Batac et al., 2021; Vilarinho et al., 2023). In practice, asset management frequently exhibits problems associated with policy fragmentation, including disconnected data systems, regulatory complexity, inconsistent administrative practices, and limited coordination across responsible units (Alam et al., 2026; Giglio et al., 2018; Masdjojo & Dewi, 2018; Schraven et al., 2011). Digital administrative systems can improve standardization and information availability, but their integrative effects depend on how officials understand, use, and coordinate around them. In Indonesia, systems for regional asset administration have been introduced to strengthen accountability and standardization, yet implementation challenges associated with data quality, technical capacity, and integration with planning and budgeting remain (Nanang et al., 2023; Ugarelli & Sægrov, 2022).

These characteristics make public asset management more than a technical administrative function. It constitutes a setting in which institutional rules must continuously be interpreted, understandings coordinated across organizational boundaries, and routines adjusted to regulatory and technological change. It therefore provides an analytically useful context for observing whether limitations in BCF generate fragmented interpretations, weak relational alignment, and reactive adaptation—and how these mechanisms ultimately shape policy integration.

RESEARCH DESIGN AND METHODS

Research Design and Case Selection

This study employed an instrumental single-case design in South Konawe Regency, Southeast Sulawesi, Indonesia (Yin, 2018). The case was selected for its analytical relevance rather than statistical representativeness. South Konawe combines increasing fiscal and asset-management demands with persistent challenges in coordinating administrative processes across organizational units, providing a suitable setting for examining how bureaucratic cognitive flexibility (BCF) becomes consequential for policy integration under institutional constraints.

Three local government organizations were selected to capture variation in asset-management responsibilities: (1) the central administrative unit responsible for financial and asset governance, (2) a sectoral agency managing education-related assets, and (3) a sectoral agency responsible for health infrastructure and equipment. Although their functional responsibilities differ, all three operate within shared regulatory frameworks and depend on cross-unit coordination for planning, administration, and reporting. This configuration enabled the study to examine how common institutional requirements were interpreted and enacted across different organizational settings.

Data Collection

Fieldwork was conducted from May to August 2023 using semi-structured interviews, document analysis, and non-participant observation, enabling comparison among officials' accounts, formal administrative arrangements, and observed practices. Twenty-three participants were purposively selected for their direct involvement in asset planning, administration, coordination, reporting, or regulatory implementation across the three organizations. Table 1 summarizes their distribution by organizational setting and role category.

Table 1. Participant profile by organizational setting and role

Organizational setting	Senior administrators	Mid-level managers	Technical staff	Total
Central financial and asset-management unit	2	3	2	7
Education-sector agency	1	3	3	7
Health-sector agency	2	4	3	9
Total	5	10	8	23

Source: Authors' fieldwork data (2023).

Interviews lasted 45–90 minutes and explored regulatory interpretation, cross-unit coordination, asset-management practices, organizational constraints, and responses to administrative change. All interviews were conducted and transcribed verbatim in Indonesian. Quotations selected for reporting were translated into English using AI-assisted translation and subsequently edited for linguistic clarity using Grammarly. The researchers then checked each reported quotation against the original Indonesian transcript to ensure consistency of substantive and contextual meaning. Particular attention was given to context-specific administrative and bureaucratic terminology, for which institutional meaning was prioritized over literal word-for-word equivalence.

Data collection and preliminary analysis proceeded iteratively, with thematic saturation rather than a predetermined sample size guiding interview recruitment. Saturation was assessed across organizational settings, role categories, and emerging themes by comparing accounts from senior administrators, mid-level managers, and technical staff in the three organizations. Interviews continued until additional accounts produced no substantively new themes or meaningful variations in the emerging patterns relevant to the study. Document analysis included local regulations, strategic planning documents (2018–2023), annual performance reports, asset inventory records, internal guidelines, and training records. These materials were used to examine formal arrangements and their translation into organizational practice. Approximately 120 hours of non-participant observation covered internal meetings, routine administrative activities, and informal staff interactions across the three organizations. Systematic field notes focused on coordination, decision-making, regulatory interpretation, and digital asset-management systems, capturing practices not always articulated in interviews.

Data Analysis

Data were analyzed thematically following Braun & Clarke (2023), combining inductive and theoretically informed coding. Analysis was conducted on the original Indonesian-language material to minimize interpretive loss, with English translation limited to quotations selected for reporting. Analysis began with repeated reading of interview transcripts, documents, and observational field notes. Initial coding remained close to the empirical material, identifying recurring patterns in regulatory interpretation, cross-unit coordination, routine adjustment, technology use, and organizational constraints. A subsequent stage used four sensitizing concepts from policy integration and cognitive flexibility scholarship: rule reinterpretation, cross-boundary coordination, adaptive routines, and institutional constraints. These served as heuristic guides rather than predetermined coding categories.

Codes were iteratively compared across participants, organizations, and data sources and clustered into broader patterns. Divergent and contradictory evidence was retained during theme refinement. Through this process, three higher-order mechanisms—interpretive, relational, and adaptive—emerged as the most coherent explanation of how limitations in BCF became consequential for policy integration. An audit trail documented key coding and thematic decisions. Triangulation involved comparing interview accounts with documentary and observational evidence to identify both convergence and discrepancies between formal procedures and enacted practices. All 23 interviews contributed to coding and theme development. Quotations presented in the findings were selected parsimoniously for their explanatory strength and capacity to represent recurrent patterns, rather than frequency alone, allowing empirical depth without reproducing substantively similar accounts.

Trustworthiness, Researcher Reflexivity, and Ethical Considerations

Several measures were used to strengthen the credibility and transparency of the analysis. Triangulation across interviews, documents, and observations supported cross-validation of interpretations. Member checking was conducted with 17 of the 23 participants, who reviewed their respective interview transcripts and interview summaries to verify the accuracy and completeness of their recorded accounts. This process was used primarily for factual and representational verification rather than for validating the researchers' subsequent thematic interpretations. The researchers were university academics with no formal employment or administrative responsibilities within the organizations studied. Their academic backgrounds provided familiarity with public administration and the broader institutional context, while their external position reduced direct involvement in the administrative processes under investigation. Reflexive field notes and comparison across interviews, documents, and observations were used to examine initial interpretations and distinguish participants' accounts from the researchers' analytical inferences.

The study did not undergo formal review by an institutional ethics committee. It was conducted as part of a local government-funded research program and received formal permission for data collection from the relevant local government authorities and participating organizations. The research proposal was also subject to institutional scholarly review involving academic reviewers from higher education institutions as part of the local government research program; this process constituted scientific review rather than formal ethics committee approval. All participants were informed about the purpose of the study, the voluntary nature of participation, and the intended use of the data, and provided informed consent before participation.

To protect confidentiality, interviewees were assigned non-identifiable codes, and references to specific positions were generalized as "senior official," "mid-level manager," or "technical staff," particularly because the relatively small organizational setting could otherwise permit indirect identification. The underlying dataset is not publicly available because of confidentiality commitments. Transparency is instead supported through detailed reporting of data sources, analytical procedures, triangulation, and the evidentiary basis of the findings.

RESULTS

The analysis identified three interrelated mechanisms through which limitations in situated cognitive flexibility became consequential for policy integration: interpretive, relational, and adaptive. Rather than treating these mechanisms as direct measures of BCF, the analysis examines how regulatory interpretation, cross-unit interaction, and routine adaptation revealed the organizational conditions under which cognitive reconsideration was enabled or constrained and how these conditions were associated with more or less integrated administrative practice.

Table 2. Summary of BCF mechanisms and policy integration outcomes

BCF mechanism	Empirical manifestation	Compensatory practices	Policy integration consequence
Interpretive	Regulatory changes generated uneven interpretations of asset-management requirements across units. Updated rules were not always translated consistently into internal procedures and routines.	Peer consultation, technical workshops, experience sharing, and informal clarification of regulatory requirements.	Partial interpretive alignment: immediate uncertainty was reduced, but shared interpretations remained uneven and weakly institutionalized.
Relational	Differences in procedural understanding, responsibilities, and technology use constrained shared understanding across organizational boundaries.	Informal cross-unit communication, peer assistance, ad hoc coordination, and interpersonal problem	Incomplete institutional alignment: informal relationships bridged immediate coordination gaps but did not consistently

	Coordination often depended on personal initiative.	solving.	generate shared cross-unit practices.
Adaptive	Frequent changes in technical guidance and uneven adoption of digital systems required continuing adjustments to workflows and administrative routines.	Workflow revision, documentation adjustment, manual cross-checking, informal coordination, and adaptation to SIMDA-NG.	Reactive rather than institutionalized adaptation: adjustments maintained administrative continuity but rarely developed into shared learning or integrated organizational routines.

Source: Authors' analysis based on interviews, documents, and observations.

Across the three mechanisms, organizational conditions were not treated as manifestations of cognitive limitation. Gaps in internal guidance, weakly institutionalized learning, reliance on informal coordination, and uneven digital adoption constituted organizational conditions that shaped the opportunities for officials to reconsider interpretations, align understandings, and incorporate adjustments into shared routines. The analysis therefore distinguishes these conditions from the situated cognitive processes through which they became consequential for policy integration.

Interpretive Mechanism: Reinterpreting Regulatory Change

The first mechanism concerned how officials interpreted and reconciled changing regulatory requirements. Frequent regulatory change created uncertainty about how new requirements should be incorporated into existing planning, implementation, and reporting routines, a pattern evident across organizational levels and the three organizations. One official described the problem succinctly:

“Frequent changes in regulations are one of the main challenges.” (RI-03)

The concern was particularly evident when regulatory revisions required officials to reconsider established procedures within relatively short periods. Interview accounts indicated that officials differed in how quickly and confidently they translated new requirements into operational practices. More experienced staff often relied on previous cases and informal knowledge, whereas others waited for clarification or followed established routines until more explicit guidance became available. As a result, the same regulatory changes could be interpreted differently across organizational units.

Documentary evidence reinforced this pattern. Reviews of planning and performance documents from 2018–2023 showed that regulatory updates were not always accompanied by corresponding adjustments in internal guidance and administrative procedures. Observations similarly showed officials seeking clarification from colleagues when formal guidance was unclear, with comparable issues occasionally handled differently across units. The resulting fragmentation therefore reflected an interaction between organizational conditions—including gaps in updated internal guidance—and uneven interpretive processes through which changing requirements were translated into administrative practice.

Officials attempted to manage this uncertainty through peer consultation, technical workshops, and experience sharing. As one participant explained:

“We conduct annual workshops to train asset managers and users and share experiences.” (RI-11)

These practices helped resolve immediate interpretive problems and promoted some consistency. However, they remained episodic and primarily operational rather than forming a sustained organizational learning process. **Consequently, regulatory interpretation continued to vary across units despite these compensatory efforts.**

Relational Mechanism: Constructing Shared Understanding Across Units

The second mechanism concerned the relational dimension of BCF. Even where individual officials could

interpret regulatory requirements, integration depended on whether those interpretations could be aligned across organizational boundaries. Interviewees repeatedly associated coordination problems with differences in procedural understanding, organizational responsibilities, and technology use. A mid-level official captured this problem directly:

“The main challenge is the lack of a shared understanding of procedures and technology.” (RI-12)

This lack of shared understanding affected how units coordinated asset planning, administration, and reporting. Interviews indicated that coordination frequently depended on personal initiative and informal communication rather than established cross-unit problem-solving arrangements. Officials contacted colleagues to clarify procedures, reconcile data, or resolve reporting problems, but these interactions were often triggered by immediate administrative needs rather than routine collaborative processes.

Observational evidence supported these accounts. Cross-unit interactions focused predominantly on procedural compliance, reporting requirements, and the resolution of specific administrative problems, with relatively limited evidence of joint interpretation or anticipatory problem-solving. Documentary comparisons also revealed variations in internal guidance and reporting practices across units, suggesting that common formal regulations did not automatically produce common administrative understandings.

Informal relationships partly compensated for these coordination gaps by allowing officials to negotiate procedural differences and resolve immediate problems. Their effectiveness, however, depended heavily on personal initiative and established relationships rather than routine cross-unit learning.

The relational mechanism therefore demonstrates that BCF becomes organizationally consequential through interaction. Individual flexibility alone was insufficient to generate integration when shared interpretive frameworks and routine cross-unit learning remained weak. The findings thus show that individual interpretive flexibility became consequential for integration only when understandings could be negotiated and shared across organizational boundaries.

Adaptive Mechanism: Adjusting Routines and Technology

The third mechanism involved the capacity to adjust administrative routines in response to regulatory, operational, and technological change. Officials described repeated changes in technical guidance as disruptive because established workflows had to be modified while routine administrative responsibilities continued. As one participant explained:

“When technical guidelines are frequently revised, we find it difficult to use assets optimally.” (RI-08)

Interview evidence showed that officials modified established routines as new requirements emerged. These adjustments helped maintain administrative continuity, but typically occurred in response to immediate operational problems rather than through systematic organizational learning.

The adaptive mechanism concerned how officials adjusted established routines in response to changing administrative and technological requirements. This was particularly visible in the use of SIMDA-NG (Sistem Informasi Manajemen Daerah–Next Generation), a digital administrative system used in local government asset-management processes. Its introduction provided a concrete setting for examining how officials adjusted established asset-management routines to changing digital procedures. Participants described differences in familiarity with the system and varying reliance on peer assistance when formal training or technical guidance was insufficient. These responses enabled officials to maintain day-to-day administrative continuity, but they did not necessarily produce standardized organizational routines or shared learning across units. One participant noted:

“SIMDA-NG helps synchronize data and reduce administrative errors.” (RI-14)

However, interviews and observations showed uneven adoption across units. Digital systems were used mainly for recording and reporting, while manual cross-checking and informal coordination remained necessary to

reconcile inconsistencies. **Digitalization therefore strengthened integration only where technological adaptation was accompanied by shared understanding and coordinated use.** Some officials demonstrated considerable practical adaptability. They revised workflows, documentation, and approval steps when new requirements were introduced, thereby reducing immediate disruption. Yet these adjustments were seldom consolidated into shared learning routines or used systematically for anticipatory planning. The adaptive mechanism consequently supported short-term problem solving more strongly than long-term organizational integration.

DISCUSSION

The findings suggest that policy integration cannot be explained adequately by the presence or absence of formal coordination arrangements alone. Across the three organizations, common regulations, administrative responsibilities, and digital systems provided a formal basis for integration, yet their effects depended on how bureaucrats interpreted changing requirements, constructed shared understandings, and adapted routines. This qualifies institutionally oriented accounts of policy integration (Bianchi et al., 2021; Cejudo & Trein, 2023; Osborne et al., 2022) by identifying the cognitive and relational processes through which formal arrangements acquire practical meaning. The contribution is therefore not to replace institutional explanations with an individual-level account, but to specify how institutional conditions become consequential through situated bureaucratic action.

Importantly, the findings do not imply that cognitive limitations provide an exclusive or primary explanation for fragmentation. Several observed problems—including gaps in updated administrative guidance, weakly institutionalized learning, reliance on informal coordination, and uneven digital adoption—constituted organizational conditions in their own right. At the same time, officials sometimes maintained administrative continuity through peer consultation and pragmatic adjustments despite these constraints. These patterns suggest an interactive explanation: organizational conditions shape opportunities for cognitive reconsideration, while situated cognitive processes influence how those conditions are interpreted and addressed in practice. BCF therefore complements rather than substitutes for organizational and institutional explanations of policy integration. Understanding this interaction therefore requires attention to how formal institutional arrangements are interpreted, negotiated, and adapted in everyday administrative practice. The following sections examine this interaction by tracing how interpretive, relational, and adaptive mechanisms connect situated cognitive reconsideration with the practical enactment of policy integration.

From Formal Coordination to Interpretive Integration

Policy integration scholarship has established that regulatory consistency and coordination arrangements are important for reducing fragmentation (Cejudo & Michel, 2021; Cejudo & Trein, 2023). The present findings add a prior interpretive problem: formally consistent rules can still generate fragmented implementation when bureaucrats construct different operational meanings from them. Regulatory change in South Konawe did not merely increase administrative workload; it repeatedly required officials to reconcile new requirements with accumulated procedures, experience, and existing organizational routines. Integration therefore depended partly on whether regulatory meaning could be reconstructed sufficiently consistently across organizational settings.

This finding illustrates how a core insight of Cognitive Flexibility Theory—the reconsideration of established representations under changing conditions (Spiro et al., 1988, 1991)—can inform the analysis of bureaucratic interpretation without treating bureaucratic flexibility as unconstrained individual adaptation. In bureaucratic settings, the range and timing of such reconsideration are shaped by hierarchy, procedural accountability, and legal requirements (Peters, 2018). The empirical pattern of peer consultation and episodic workshops illustrates this interaction. Officials were neither mechanically rule-bound nor freely adaptive. They exercised interpretive flexibility through institutionally available resources, but unequal access to experience and shared learning produced different interpretations of formally common requirements.

The findings suggest that interpretive alignment is an important condition for effective organizational coordination. Coordination mechanisms may connect units formally, but they cannot ensure integration when participating actors attach different operational meanings to the rules being coordinated. This helps explain why

formal arrangements identified in policy integration research may coexist with implementation fragmentation: the missing link can lie in the interpretive work required to make those arrangements actionable.

Relational BCF and the Social Production of Integration

The relational mechanism develops this argument further. Policy integration is commonly associated with information sharing, inter-organizational coordination, and mechanisms for overcoming administrative silos (Bianchi et al., 2021; Cejudo & Michel, 2021). The findings indicate, however, that exchanging information is not equivalent to constructing shared understanding. Officials frequently communicated across organizational boundaries, yet coordination remained dependent on personal initiative and informal relationships because interpretations had not been consistently converted into collectively shared frames of action.

This observation further clarifies how BCF becomes organizationally consequential in bureaucratic settings. If cognitive flexibility were exclusively an individual capacity, more flexible officials should be better able to manage policy complexity independently. The evidence instead suggests that individual reinterpretation contributes to integration only when revised understandings can be communicated, negotiated, and aligned across organizational boundaries. In this sense, BCF becomes relationally consequential through interaction rather than through individual flexibility alone.

This argument complements Lipsky's (1980, 2010) account of bureaucrats as active interpreters operating within institutional constraints while extending attention from individual coping toward cross-boundary consequences. Informal relationships in South Konawe enabled officials to compensate for gaps in formal coordination, but their dependence on particular individuals made the resulting alignment fragile. Informality can therefore function simultaneously as a coordination resource and an institutional vulnerability: it permits immediate problem solving while leaving integration dependent on interpersonal connectivity rather than reproducible organizational arrangements.

The implication for policy integration theory is that relational structures and relational cognition should not be conflated. Creating meetings, communication channels, or coordinating units establishes opportunities for interaction; it does not ensure that actors develop shared interpretations. Integration is socially produced when those interactions enable actors to revise and align their understandings across organizational boundaries.

Adaptation without Integration

The adaptive mechanism reveals another distinction that is easily obscured in accounts emphasizing administrative capacity: adaptation is not necessarily integration. Cognitive flexibility research associates adaptation with the ability to respond effectively to changing conditions (Hohl & Dolcos, 2024; Lee et al., 2024), while policy integration research emphasizes the capacity to sustain coherence as implementation environments evolve (Cejudo & Trein, 2023; Osborne et al., 2022). The South Konawe case illustrates how these processes can diverge. Officials repeatedly modified workflows and administrative practices to maintain operations, yet these adjustments often remained localized and reactive.

Digital asset-management systems improved standardization, data synchronization, and reporting, but did not automatically eliminate manual reconciliation or uneven practices across units. This supports the broader argument in the asset-management literature that technological systems alone do not resolve fragmented administrative processes (Alam et al., 2026; Giglio et al., 2018; Nanang et al., 2023; Rufini et al., 2026; Ugarelli & Sægrov, 2022). More importantly, the findings specify why: technological integration depends on the cognitive and relational work through which users develop common understandings of how technology should be incorporated into interconnected routines.

The findings point to a useful analytical distinction between adaptive continuity and integrative adaptation. The former enables organizations to continue functioning despite changing demands; the latter converts localized adjustments into shared routines and organizational learning that improve coherence across units. Compensatory practices observed in this study—peer consultation, procedural adjustment, manual reconciliation, and informal problem solving—were effective primarily at the first level. They absorbed immediate disruption but were only weakly converted into collective learning.

This distinction also prevents BCF from being equated with administrative improvisation. Flexibility contributes to integration not because bureaucrats continuously depart from established routines, but because adaptive responses can eventually be stabilized, shared, and incorporated into coordinated organizational practice. Without such institutionalization, flexibility may sustain implementation while leaving underlying fragmentation largely intact.

BCF as a Situated Micro-Foundation of Policy Integration

The three mechanisms refine the relationship between cognition and policy integration proposed in the analytical framework. The interpretive mechanism connects cognitive reconsideration to the operational meaning of changing requirements; the relational mechanism connects revised interpretations to negotiation and alignment across organizational boundaries; and the adaptive mechanism connects negotiated understandings to changes in administrative routines. None is sufficient independently, and their integrative effects depend on the institutional conditions through which they are enacted. Their relationship is not necessarily sequential: cross-unit interaction can reshape interpretations, while adjustments to routines can create new demands for interpretation and coordination, making the relationship among the mechanisms potentially recursive.

This provides a more specific micro-level explanation for an established puzzle in policy integration research: why apparently appropriate institutional arrangements can coexist with fragmented implementation. Institutional structures establish authority, procedures, resources, and opportunities for coordination, but bureaucrats must still make these arrangements meaningful and mutually compatible in practice. Conversely, individual cognitive flexibility cannot compensate indefinitely for weak learning structures or fragmented coordination. The relationship is therefore interactive rather than substitutive: institutional conditions shape how bureaucratic flexibility can be enacted, while bureaucratic interpretation and interaction shape how formal arrangements operate in practice.

BCF can consequently be understood as a situated micro-foundation of policy integration, but not as an autonomous individual-level cause. Its explanatory value lies in showing how individual cognitive reconsideration becomes organizationally consequential when interpretations are translated into operational meanings, negotiated across organizational boundaries, and incorporated into—or excluded from—shared administrative routines. The micro-to-meso connection therefore depends on processes of translation, interaction, and institutionalization rather than on the simple aggregation of individual flexibility. This qualification avoids psychologizing policy failure. Fragmentation is not attributed to cognitively deficient bureaucrats; rather, limitations in flexibility emerge through the interaction between actors and institutional environments that provide unequal opportunities for interpretation, shared learning, and adaptation.

The broader implication is that structural connectivity alone may be insufficient for policy integration. The findings suggest that formal coordination may be more effective when accompanied by interpretive alignment, shared understanding across organizational boundaries, and arrangements that support the institutionalization of adaptive responses. In this case, limitations in situated bureaucratic cognitive flexibility help explain why formal coordination arrangements did not always translate into integrated administrative practice. The analysis identifies interpretive, relational, and adaptive mechanisms through which regulatory change, cross-unit interaction, and routine adjustment became consequential for policy integration.

CONCLUSION

This study examined how limitations in bureaucratic cognitive flexibility (BCF) become consequential for policy integration in local public asset management and how bureaucrats navigate these constraints in practice. Evidence from three local government organizations in South Konawe Regency identifies three interrelated mechanisms. Interpretively, regulatory change generated uneven understandings when new requirements were not consistently translated into shared administrative guidance. Relationally, individual interpretations did not readily become coordinated action where shared understanding across organizational boundaries remained weak. Adaptively, officials adjusted routines and technologies to maintain administrative continuity, but these responses were often reactive and localized rather than institutionalized as collective learning. Bureaucrats partly compensated for these limitations through peer consultation, informal coordination, workshops, procedural

adjustment, and technology use, although these practices did not consistently produce integrated organizational routines.

These findings support a more situated understanding of BCF in public administration. Cognitive flexibility should not be treated as an autonomous individual attribute that independently determines policy integration. Its organizational significance **depends partly on** the institutional conditions through which bureaucrats interpret rules, negotiate understandings with others, and translate adaptation into shared routines. The study therefore contributes a micro-level explanation of why formal coordination arrangements may not always translate into integrated administrative practice. Specifically, the interpretive, relational, and adaptive mechanisms identified here clarify how situated cognitive processes become connected to organizational integration without reducing policy fragmentation to individual cognitive limitations.

The findings also have practical implications for local public administration. The findings suggest that strengthening integration involves more than introducing additional formal coordination mechanisms or digital systems. Organizations may therefore benefit from arrangements that support shared regulatory interpretation, routine cross-unit learning, and the institutionalization of adaptive responses. Technical workshops can be oriented beyond individual skill development toward collective interpretation of changing requirements; cross-unit forums can provide regular opportunities to reconcile procedural understandings; and lessons generated through local adjustments can be documented and incorporated into organizational routines. Digital systems are similarly more likely to support integration when their use is accompanied by shared understanding and coordinated practices across organizational units.

These conclusions should be interpreted within the study's scope. The analysis is based on a single local government case and three organizations within the specific institutional domain of public asset management. Its contribution is therefore analytical rather than statistically generalizable. Moreover, the qualitative design identifies mechanisms and relationships among interpretation, interaction, adaptation, and policy integration but does not establish causal effects or their relative magnitude. Future research could examine whether the three mechanisms identified here operate similarly across other local governments, policy sectors, and institutional settings. Comparative and longitudinal studies would be particularly useful for examining how changes in organizational learning and coordination arrangements enable or constrain BCF over time. Quantitative research could subsequently develop measures of situated BCF and test its relationship with different dimensions of policy integration. Such research would help establish the scope conditions of the mechanisms identified here while preserving the central insight of this study: the effectiveness of formal integration arrangements depends partly on how bureaucrats collectively interpret, coordinate, and adapt within the institutional environments in which those arrangements are enacted.

ETHICAL APPROVAL

Formal approval from an institutional ethics committee was not obtained. As detailed in the Methods, the study was conducted as part of a local government-funded research program and received formal permission for data collection from the relevant local government authorities and participating organizations. All participants provided informed consent, and confidentiality was maintained throughout data collection and reporting.

DISCLOSURE OF INTEREST

The authors report there are no competing interests to declare.

DATA AVAILABILITY STATEMENT

The qualitative data supporting the findings of this study are not publicly available because they contain potentially identifiable information and are subject to confidentiality commitments made to participants. Relevant documentary materials that are publicly accessible can be obtained from the official sources cited in the article.

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